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NEWS 7 SEP 11 WPIDS, WPINDEX, and WPIX now include Japanese FTERM
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NEWS 8 OCT 21 Derwent World Patents Index Coverage of Indian and
Taiwanese Content Expanded
NEWS 9 OCT 21 Derwent World Patents Index enhanced with human
translated claims for Chinese Applications and
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=> file caplus, agricola, biosis

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FILE 'BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009
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```
=> s alpha (2w) hydroxi (2w) hydroperoxide?
L1      0 ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?

=> s hydroxi (3w) hydroperoxide?
L2      0 HYDROXI (3W) HYDROPEROXIDE?

=> s hydroxi (5w) hydroperoxide
L3      0 HYDROXI (5W) HYDROPEROXIDE

=> s (sunflower (w) oil) (L) (ozone) (L) hydroperoxide
L4      8 (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE

=> d 14 1-8 ibib abs
```

L4 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:520846 CAPLUS
 DOCUMENT NUMBER: 145:82192
 TITLE: Sunflower oil ozonization. Following the reaction by
 proton nuclear magnetic resonance
 AUTHOR(S): Gomez, Maritza F. Diaz; Sazatornil, Jose A. Gavin
 CORPORATE SOURCE: Departamento de Sustancias Ozonizadas, Centro de
 Investigaciones del Ozono, Centro Nacional de
 Investigaciones Cientificas, Havana, Cuba
 SOURCE: Revista CENIC, Ciencias Quimicas (2005), 36(3),
 165-168
 CODEN: RCCQER; ISSN: 1015-8553
 PUBLISHER: Centro Nacional de Investigaciones Cientificas
 DOCUMENT TYPE: Journal
 LANGUAGE: Spanish
 AB Ozonized sunflower oil has wide biocidal activities
 (antibacterial, antiviral, antifungal, antiprotozoal) usable in medicinal
 practice. Proton NMR can be used to follow the ozone reaction
 with unsatd. fatty acids. The ozonization of sunflower
 oil was carried out at 0-107.1 mg ozone/g oil and
 peroxide index and aldehyde contents were determined. The ozonation reaction
 was run for 3.5 h; the maximum peroxide number reached with 107.1 mg
 ozone/g oil was 1202 mEq/kg. Oil samples collected during the
 ozonation were stored at 2-8°C until 1H-NMR anal. The intensities
 of fatty acid olefinic proton signals (δ = 5.35 ppm) decreased with
 increasing ozone concns. but did not disappear completely. The
 Criegee ozonide (δ = 5.15 ppm) levels obtained at 107.1 mg
 ozone/g were .apprx.7.4-folds higher than at the beginning of
 reaction. The aldehyde protons had only weak signal (δ = 9.63 and

9.74 ppm) in all spectra. The signals of olefinic protons from hydroperoxides ($\delta = 5.55$ ppm) increased with increasing ozone levels. Signals from other oxygenized groups were also assigned. Thus, the higher applied dose of ozone, the higher yield of oxygenated compds. was obtained.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:207272 CAPLUS

DOCUMENT NUMBER: 145:26861

TITLE: Study of Ozonated Sunflower Oil Using ¹H NMR and Microbiological Analysis

AUTHOR(S): Diaz, Maritza; Gavin, Jose; Gomez, Magali; Curtielles, Vicente; Hernandez, Frank

CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research, Havana, Cuba

SOURCE: Ozone: Science & Engineering (2006), 28(1), 59-63

CODEN: OZSEDS; ISSN: 0191-9512

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Prior studies have proven that ozonized vegetable oils present a high germicidal power. Ozonization of sunflower oil at different applied ozone dosages was carried out and peroxide and aldehydes indexes along with antimicrobial activity were determined. The reaction products were identified using ¹H NMR. The principal signals intensity values were used for following the reaction course between ozone and sunflower oil. The reaction was following up to peroxide index values of 1202 mmol-equi/Kg. The intensities of olefinic proton signals decreased with the gradual increase in ozone concentration but without disappearing completely. The Criegee ozonides obtained at 107.1 mg/g ozone doses were .apprx.3.9-fold higher than that at beginning of the reaction. The aldehyde protons were observed as a weak intensity signal in all the spectra. The signals belonging to olefinic protons from hydroperoxides appeared weak and increased with the increase in ozone doses. Signals from other oxygenated groups were assigned. The highest action spectrum of antimicrobial activity was obtained with the higher peroxide index. It was concluded that at higher applied ozone doses, the higher the antimicrobial activity potential of ozonized sunflower oil.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:1218789 CAPLUS

DOCUMENT NUMBER: 144:231699

TITLE: Determination of total hydroperoxides in ozonized sunflower oil using the ferrous oxidation in xylenol orange assay

AUTHOR(S): Tellez, Goitybell Martinez; Tapanez, Rebeca Hernandez; Gomez, Maritza Diaz

CORPORATE SOURCE: Centro de Investigaciones del Ozono, Ciudad de la

Habana, Cuba
 SOURCE: Grasas y Aceites (Sevilla, Spain) (2005), 56(2), 147-152
 CODEN: GRACAN; ISSN: 0017-3495
 PUBLISHER: Instituto de la Grasa
 DOCUMENT TYPE: Journal
 LANGUAGE: Spanish
 AB The total hydroperoxide (HPT) concentration determined by the ferrous oxidation in xylenol orange (OFX) assay and peroxide value (IP) determined by the iodometric assay were determined in sunflower oil samples ozonized with different ozone doses. The effects of increasing the amount of ozonized sunflower oil sample in the OFX assay was evaluated and a linear relationship was found between oil amts. of 2-17 µg and absorbance at 560 nm. The OFX reagent calibration with tert-butylhydroperoxide and extinction coefficient calcn. were done for the HPT determination in ozonized samples. There was linear correlation between IP and OFX assay data ($r = 99.29$; $r^2 = 98.59\%$). Thus, the OFX assay is appropriate for HPT determination in ozonized sunflower oil.
 REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L4 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2003:865991 CAPLUS
 DOCUMENT NUMBER: 140:130053
 TITLE: Ozonation of sunflower oil: Spectroscopic monitoring of the degree of unsaturation
 AUTHOR(S): Soriano, Nestor U., Jr.; Migo, Veronica P.; Matsumura, Masatoshi
 CORPORATE SOURCE: Institute of Applied Biochemistry, University of Tsukuba, Ibaraki, 305-8572, Japan
 SOURCE: Journal of the American Oil Chemists' Society (2003), 80(10), 997-1001
 CODEN: JAOCA7; ISSN: 0003-021X
 PUBLISHER: AOCS Press
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Consumption of ozone by unsatd. FA moieties of sunflower oil (SFO) was monitored by ¹H NMR and FTIR spectroscopy. Degradation of linoleate was found to be 1.5 and 1.8 times higher than oleate when SFO was ozonized in the absence and presence of water, resp. Products of ozonation in both cases include aldehydes and ozonides with 1,2,4-trioxolane ring. Hydroxyl-containing compds., which could be carboxylic acids and/or hydroperoxides, were also detected in samples ozonized in the presence of water. The extent of ozonation had very little effect on the aldehyde/ozonide ratio obtained from NMR spectra, especially in the ozonation of neat SFO. The aldehyde/ozonide ratios obtained regardless of the extent of ozonation were 10.5:89.5 and 46.6:53.4 for SFO ozonized in the absence and presence of water, resp.
 OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L4 ANSWER 5 OF 8 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2006:522155 BIOSIS
 DOCUMENT NUMBER: PREV200600532108
 TITLE: Measurement of peroxidic species in ozonized sunflower oil.

AUTHOR(S): Tellez, Goitybell Martinez; Lozano, Oscar Ledea; Diaz Gomez, Maritza F. [Reprint Author]
 CORPORATE SOURCE: Natl Ctr Sci Res, Ozone Res Ctr, Dept Ozonized Subst, POB 6412, Havana, Cuba
 maritza.diaz@cnic.edu.cu
 SOURCE: Ozone Science & Engineering, (JUN 2006) Vol. 28, No. 3, pp. 181-185.
 CODEN: OZSEDS. ISSN: 0191-9512.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 12 Oct 2006
 Last Updated on STN: 12 Oct 2006

AB Peroxidic species in ozonized sunflower oil using different methods as iodometric and ferrous oxidation in xylenol orange (FOX) were measured. The necessary reaction time from two minutes up to 36 hours using iodometric assay in ozonized sunflower oil was determined. Peroxide values achieved maximum values at 24 hours of reaction time. Hydroperoxides content measured by FOX assay and peroxide value determined at two minutes using iodometric assay had a linear relationship ($r(2) = 98.18\%$), while, at 24 hours a logarithmic relationship ($r(2) = 98.39\%$) was shown. Values of hydroperoxides were lower than peroxides values at 24 hours and represent between 23 and 44% in all samples of ozonized sunflower oil studied.

L4 ANSWER 6 OF 8 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2006:368724 BIOSIS
 DOCUMENT NUMBER: PREV200600373535
 TITLE: Study of ozonated sunflower oil H-1 NMR and microbiological analysis.
 AUTHOR(S): Diaz, Maritza F. [Reprint Author]; Gavin, Jose A.; Gomez, Magali; Curtielles, Vicente; Hernandez, Frank
 CORPORATE SOURCE: Natl Ctr Sci Res, Ozone Res Ctr, Dept Ozonized Substances, POB 6990, Havana 6880, Cuba
 maritza.diaz@cnic.edu.cu
 SOURCE: Ozone Science & Engineering, (FEB 2006) Vol. 28, No. 1, pp. 59-63.
 CODEN: OZSEDS. ISSN: 0191-9512.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 26 Jul 2006
 Last Updated on STN: 26 Jul 2006

AB Prior studies have proven that ozonated vegetable oils present a high germicidal power. Ozonation of sunflower oil at different applied ozone dosage was carried out and peroxide and aldehydes indices along with antimicrobial activity were determined. The reaction products were identified using Proton Nuclear Magnetic Resonance Spectroscopy (H-1 NMR). The principal signals intensity values were used for following the reaction course between ozone and sunflower oil. The reaction was following up to peroxide index values of 1202 mmol-equi/kg. The intensities of olefinic proton signals decreased with the gradual increase in ozone concentration but without disappearing completely. The Criegee ozonides obtained at 107.1 mg/g of ozone doses were approximately 3.9-fold higher than that at beginning of the reaction. The aldehyde protons were observed as a weak intensity signal in all the spectra. The signals belonging to olefinic protons from hydroperoxides appeared weak and increased with the increase in ozone doses.

Signals from other oxygenated groups were assigned. The highest action spectrum of antimicrobial activity was obtained with the higher peroxide index. It was concluded that at higher applied ozone doses, the higher the antimicrobial activity potential of ozonized sunflower oil.

L4 ANSWER 7 OF 8 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2005:553442 BIOSIS
 DOCUMENT NUMBER: PREV200510338049
 TITLE: Measurement of the total hydroperoxides in ozonated sunflower oil using the ferrous oxidation in xylenol orange assay.
 Original Title: Determinacion de hidroperoxidos totales en aceite de girasol ozonizado mediante el metodo de oxidacion ferrosa en Xilenol naranja.
 AUTHOR(S): Martinez Tellez, Goitybell [Reprint Author]; Hernandez Tapanez, Rebeca; Diaz Gomez, Maritza
 CORPORATE SOURCE: Ctr Invest Ozono, Ave 15 and Calle 230, Apartado 6412, Playa, Ciudad De La Ha, Cuba
 ozo@infomed.sld.cu
 SOURCE: Grasas y Aceites, (APR-JUN 2005) Vol. 56, No. 2, pp. 147-152.
 CODEN: GRACAN. ISSN: 0017-3495.
 DOCUMENT TYPE: Article
 LANGUAGE: Spanish
 ENTRY DATE: Entered STN: 7 Dec 2005
 Last Updated on STN: 7 Dec 2005

AB Total hydroperoxides (HPT) concentration using the ferrous oxidation in xylenol orange (OFX) assay and peroxide value (IP) using iodometric assay, were determined in sunflower oil samples ozonated at different ozone dosages. The effect of an increasing amount of ozonated sunflower oil was evaluated by assembly assay, where a lineal relationship was obtained between oil amounts from 2 to 17 μ g in the assay and absorbance units measured at 560 nm. The OFX reagent calibration and the extinction coefficient calculation were carried out for HIPT measurement in ozonated samples. The correlation established between IP and the concentration obtained by OFX assay showed a lineal relationship ($r = 99.29$; $r(2) = 98.59$ %). These results confirm that this assay is appropriate for HPT measurement in ozonated sunflower oil.

L4 ANSWER 8 OF 8 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2003:558481 BIOSIS
 DOCUMENT NUMBER: PREV200300561555
 TITLE: Ozonation of sunflower oil: Spectroscopic monitoring of the degree of unsaturation.
 AUTHOR(S): Soriano, Nestor U. Jr.; Migo, Veronica P.; Matsumura, Masatoshi [Reprint Author]
 CORPORATE SOURCE: Institute of Applied Biochemistry, University of Tsukuba, Tennodai 1-1-1, Tsukuba, Ibaraki, 305-0006, Japan
 aquacel@sakura.cc.tsukuba.ac.jp
 SOURCE: Journal of the American Oil Chemists' Society, (October 2003) Vol. 80, No. 10, pp. 997-1001. print.
 CODEN: JAOCA7. ISSN: 0003-021X.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 26 Nov 2003

Last Updated on STN: 26 Nov 2003

AB Consumption of ozone by unsaturated FA moieties of sunflower oil (SFO) was monitored by ¹H NMR and FTIR spectroscopy. Degradation of linoleate was found to be 1.5 and 1.8 times higher than oleate when SFO was ozonized in the absence and presence of water, respectively. Products of ozonation in both cases include aldehydes and ozonides with 1,2,4-trioxolane ring. Hydroxyl-containing compounds, which could be carboxylic acids and/or hydroperoxides, were also detected in samples ozonized in the presence of water. The extent of ozonation had very little effect on the aldehyde/ozonide ratio obtained from NMR spectra, especially in the ozonation of neat SFO. The aldehyde/ozonide ratios obtained regardless of the extent of ozonation were 10.5:89.5 and 46.6:53.4 for SFO ozonized in the absence and presence of water, respectively.

=> s (seed (w) oil) (L) (oxygen or ozone) (L) hydroperoxide
L5 2 (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

=> d l5 1-2 ibib abs

L5 ANSWER 1 OF 2 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
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ACCESSION NUMBER: 2009:84009 AGRICOLA
DOCUMENT NUMBER: CAIN709036134
TITLE: Stability of crude sunflower oils to autoxidation and to seed aging.
AUTHOR(S): Mikolajczak, K.L.; Smith, C.R.; Wolff, I.A.
AVAILABILITY: DNAL (307.8 J82)
SOURCE: J Amer Oil Chem Soc, p. 24-25
DOCUMENT TYPE: Article
FILE SEGMENT: Other US
LANGUAGE: English

L5 ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:468775 BIOSIS
DOCUMENT NUMBER: PREV200200468775
TITLE: Dietary lipid peroxidation products and DNA damage in colon carcinogenesis.
AUTHOR(S): Kanazawa, Ayako; Sawa, Tomohiro; Akaike, Takaaki; Maeda, Hiroshi [Reprint author]
CORPORATE SOURCE: Department of Microbiology, Kumamoto University School of Medicine, Honjo 2-2-1, Kumamoto, 860-0811, Japan
SOURCE: memaedah@gpo.kumamoto-u.ac.jp
European Journal of Lipid Science and Technology, (July, 2002) Vol. 104, No. 7, pp. 439-447. print.
ISSN: 1438-7697.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 4 Sep 2002
Last Updated on STN: 4 Sep 2002

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| | |
|----|--|
| L1 | 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE? |
| L2 | 0 S HYDROXI (3W) HYDROPEROXIDE? |
| L3 | 0 S HYDROXI (5W) HYDROPEROXIDE |
| L4 | 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE |
| L5 | 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE |

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=> s hydroxi (5w) peroxide
 0 HYDROXI
 0 PEROXIDE
 L6 0 HYDROXI (5W) PEROXIDE

| | | |
|--|---------------------|------------------|
| => file caplus, agricola, biosis | | |
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| CA SUBSCRIBER PRICE | 0.00 | -3.28 |

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=> s hydroxi (w) peroxide
 L7 0 HYDROXI (W) PEROXIDE

=> s hydroperoxide?
 L8 3 HYDROPEROSIDE?

=> d 18 1-3 ibib abs

L8 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1977:455445 CAPLUS

DOCUMENT NUMBER: 87:55445

ORIGINAL REFERENCE NO.: 87:8801a,8804a

TITLE: Use of mass spectrometry for the study of oxidation

transformations of dialkyl dithiophosphates

AUTHOR(S): Kozak, Petr; Rabl, Vratislav; Kubelka, Vladislav

CORPORATE SOURCE: Prague Inst. Chem. Technol., Prague, Czech.

SOURCE: Sbornik Vysoke Skoly Chemicko-Technologicke v Praze,

D: Technologie Paliv (1976), D33, 367-80

CODEN: SVCTA6; ISSN: 0554-9736

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Oxidation products of Zn di-n-butylidithiophosphate (I) [6990-43-8], which is a polyfunctional additive for lubricating oils (corrosion inhibitor, antioxidant, detergent), with cumene hydroperoxide [80-15-9] were studied by gas chromatog. and mass spectrometry after separation by silica gel chromatog. Reactions between the products of cumene hydroperoxide decomposition and the products of I transformations were observed

L8 ANSWER 2 OF 3 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2009) on STN

ACCESSION NUMBER: 1999:75869 AGRICOLA

DOCUMENT NUMBER: IND22010312

TITLE: Alkylperoxyl radical-scavenging activity of various flavonoids and other phenolic compounds: Implications for the anti-tumor-promoter effect of vegetables.

AUTHOR(S): Sawa, T.; Nakao, M.; Akaike, T.; Ono, K.; Maeda, H.

AVAILABILITY: DNAL (381 J8223)

SOURCE: Journal of agricultural and food chemistry, Feb 1999.

Vol. 47, No. 2. p.397-402

CODEN: JAFCAU; ISSN: 0021-8561

NOTE: Includes references

PUB. COUNTRY: District of Columbia; United States

DOCUMENT TYPE: Article

FILE SEGMENT: Other US

LANGUAGE: English

AB We recently reported that alkylperoyl radical (ROO.) enhanced carcinogenesis in rats treated with carcinogen (Sawa et al. Cancer Epidemiol. Biomarkers Prev. 1998, 7, 1007-1012), and the tumor promoting action of ROO. could be reduced by addition of hot-water extracts of vegetables (Maeda et al. Japan J. Cancer Res. 1992, 83, 923-928). Here we described the ROO.-scavenging activity of flavonoids and nonflavonoid phenolics and their role in anti-tumor-promoter effects. A model molecular species, ROO., was generated from tert-butyl hydroperoxide (t-BuOOH) and heme iron, and the scavenging of t-BuOO. was determined by (a) bioassay based on the bactericidal action of ROO., (b) luminol-enhanced chemiluminescence, and (c) electron spin resonance. Of 17 authentic plant phenolics tested, 9 compounds (including rutin, chlorogenic acid, vanillin, vanillic acid, neohesperidin, garlic acid, shikimic acid, rhamnetin, and kaempferol) showed remarkably high ROO.-scavenging activity. Some of them were detected and quantified in hot-water extracts of mung bean sprouts, used as the model vegetable, and

their contents increased after germination, which paralleled very well to the ROO.-scavenging capacity of the vegetable extracts. Thus, a diet rich in these radical scavengers would reduce the cancer-promoting action of ROO.. Consequently, the carcinogenic potentials of oxygen-related radicals may be suppressed.

L8 ANSWER 3 OF 3 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2004:65632 BIOSIS
 DOCUMENT NUMBER: PREV200400067406
 TITLE:

Crystal structure of Escherichia coli thiol peroxidase in the oxidized state. Insights into intramolecular disulfide formation and substrate binding in atypical 2-Cys peroxiredoxins.

AUTHOR(S): Choi, Jongkeun; Choi, Soonwoong; Choi, Jungwon; Cha, Mee-Kyung; Kim, Il-Han; Shin, Whanchul [Reprint Author]
 CORPORATE SOURCE: School of Chemistry and Center for Molecular Catalysis, Seoul National University, Seoul, 151-742, South Korea
 nswcshin@plaza.snu.ac.kr

SOURCE: Journal of Biological Chemistry, (December 5 2003) Vol. 278, No. 49, pp. 49478-49486. print.
 CODEN: JBCHA3. ISSN: 0021-9258.

DOCUMENT TYPE:

Article

LANGUAGE:

English

ENTRY DATE:

Entered STN: 28 Jan 2004

Last Updated on STN: 28 Jan 2004

AB Thioredoxin-dependent thiol peroxidase (Tpx) from Escherichia coli represents a group of antioxidant enzymes that are widely distributed in pathogenic bacterial species and which belong to the peroxiredoxin (Prx) family. Bacterial Tpxs are unique in that the location of the resolving cysteine (CR) is different from those of other Prxs. E. coli Tpx (ExTpx) shows substrate specificity toward alkyl hydroperoxides over H₂O₂ and is the most potent reductant of alkyl hydroperoxides surpassing AhpC and BCP, the other E. coli Prx members. Here, we present the crystal structure of EcTpx in the oxidized state determined at 2.2-Å resolution. The structure revealed that Tpxs are the second type of atypical 2-Cys Prxs with an intramolecular disulfide bond formed between the peroxidatic (Cp, Cys61) and resolving (Cys95) cysteine residues. The extraordinarily long N-terminal chain of EcTpx folds into a beta-hairpin making the overall structure very compact. Modeling suggests that, in atypical 2-Cys Prxs, the CR-loop as well as the CP-loop may alternately assume the fully folded or locally unfolded conformation depending on redox states, as does the CP-loop in typical 2-Cys Prxs. EcTpx exists as a dimer stabilized by hydrogen bonds. Its substrate binding site extends to the dimer interface. A modeled structure of the reduced EcTpx in complex with 15-hydroperoxyeicosatetraenoic acid suggests that the size and shape of the binding site are particularly suited for long fatty acid hydroperoxides consistent with its greater reactivity.

=> s hydroperoxide?

L9 56183 HYDROPEROXIDE?

=> d his

(FILE 'HOME' ENTERED AT 16:05:29 ON 02 NOV 2009)

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

L1 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?
 L2 0 S HYDROXI (3W) HYDROPEROXIDE?
 L3 0 S HYDROXI (5W) HYDROPEROXIDE
 L4 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE
 L5 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

L6 FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009
 0 S HYDROXI (5W) PEROXIDE

L7 FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009
 0 S HYDROXI (W) PEROXIDE
 L8 3 S HYDROPEROSIDE?
 L9 56183 S HYDROPEROXIDE?

=> s l9 (s) (sunflower (5w) oil)
 L10 133 L9 (S) (SUNFLOWER (5W) OIL)

=> s l10 (L) (oxygen or ozone)
 L11 11 L10 (L) (OXYGEN OR OZONE)

=> d l11 1-11 ibib abs

L11 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2009:867925 CAPLUS

DOCUMENT NUMBER: 151:361299

TITLE: A straightforward strategy for the efficient synthesis of acrylate and phosphine oxide-containing vegetable oils and their crosslinked materials
 AUTHOR(S): Montero De Espinosa, L.; Ronda, J. C.; Galià, M.; Cadiz, V.

CORPORATE SOURCE: Departament de Química Analítica i Química Orgànica, Universitat Rovira i Virgili, Tarragona, 43007, Spain
 SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2009), 47(16), 4051-4063

CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Phosphorus-containing triglycerides were prepared from a new route that involves

the singlet oxygen photo-oxygenation of high oleic sunflower oil and further reduction of the resulting hydroperoxide derivs. to a mixture of secondary allylic alcs. These allylic alcs. in presence of chlorodiphenylphosphine give allylic phosphinites capable to undergo a [2,3]-sigmatropic rearrangement leading to tertiary phosphine oxides directly linked to triglyceride in a one-pot two-step reaction. The obtained phosphorus-containing triglycerides with different hydroxyl content were activated to polymerization by acrylation and these acrylate triglycerides were radically crosslinked in presence of different amts. of pentaerythritol tetra-acrylate. The thermal, dynamic-mech., and flame retardancy properties of the final materials were evaluated. Thermal and thermo-oxidative degradation was studied by gas chromatog./mass spectrometry, ³¹P HR-MAS NMR spectroscopy, and SEM.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2009:202643 CAPLUS
 DOCUMENT NUMBER: 150:400645
 TITLE: A new route to acrylate oils: crosslinking and properties of acrylate triglycerides from high oleic sunflower oil
 AUTHOR(S): Montero de Espinosa, L.; Ronda, J. C.; Galia, M.; Cadiz, V.
 CORPORATE SOURCE: Departament de Química Analítica i Química Orgànica, Universitat Rovira i Virgili, Tarragona, 43007, Spain
 SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2009), 47(4), 1159-1167
 CODEN: JPACEC; ISSN: 0887-624X
 PUBLISHER: John Wiley & Sons, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Triglycerides with acrylate functionality were prepared via singlet oxygen photooxygenation of high oleic sunflower oil and further reduction of the resulting hydroperoxide derivs. to a mixture of secondary allylic alcs. These unsatd. alcs. can be further reduced to saturated alcs. These two hydroxyl-containing triglycerides were functionalized as acrylate esters and radically crosslinked in presence of different amts. of pentaerythritol tetraacrylate. The crosslinking reactions were followed by FTIR spectroscopy and the thermal properties of the final materials were evaluated.
 OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L11 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2005:1218789 CAPLUS
 DOCUMENT NUMBER: 144:231699
 TITLE: Determination of total hydroperoxides in ozonized sunflower oil using the ferrous oxidation in xylenol orange assay
 AUTHOR(S): Tellez, Goitybell Martinez; Tapanez, Rebeca Hernandez; Gomez, Maritza Diaz
 CORPORATE SOURCE: Centro de Investigaciones del Ozono, Ciudad de la Habana, Cuba
 SOURCE: Grasas y Aceites (Sevilla, Spain) (2005), 56(2), 147-152
 CODEN: GRACAN; ISSN: 0017-3495
 PUBLISHER: Instituto de la Grasa
 DOCUMENT TYPE: Journal
 LANGUAGE: Spanish
 AB The total hydroperoxide (HPT) concentration determined by the ferrous oxidation in xylenol orange (OFX) assay and peroxide value (IP) determined by the iodometric assay were determined in sunflower oil samples ozonized with different ozone doses. The effects of increasing the amount of ozonized sunflower oil sample in the OFX assay was evaluated and a linear relationship was found between oil amts. of 2-17 µg and absorbance at 560 nm. The OFX reagent calibration with tert-butylhydroperoxide and extinction coefficient calcn. were done for the HPT determination in ozonized samples. There was linear correlation between IP and OFX assay data ($r = 99.29$; $r^2 = 98.59\%$). Thus, the OFX assay is appropriate for HPT determination in ozonized sunflower oil.
 REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1999:559976 CAPLUS

DOCUMENT NUMBER: 131:257940

TITLE: Oil-acrylate hybrid emulsions, mini-emulsion polymerization and characterization

AUTHOR(S): van Hamersveld, Eelco M. S.; van Es, J. J. G. S.; Cuperus, F. P.

CORPORATE SOURCE: Faculty of Polymer Chemistry, Eindhoven University of Technology, Eindhoven, 5600, Neth.

SOURCE: Colloids and Surfaces, A: Physicochemical and Engineering Aspects (1999), 153(1-3), 285-296
CODEN: CPAAEH; ISSN: 0927-7757

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The use of oxidized triglycerides as initiators for the mini-emulsion polymerization of acrylate is described. Unsaturated triglycerides, as in, e.g. sunflower oil, were treated with mol. oxygen to generate fatty-acid hydroperoxide groups. Oil-acrylate hybrid emulsions were formed using the fatty-acid hydroperoxides as initiators for the mini-emulsion polymerization of acrylates in an Fe²⁺/EDTA/SFS

redox system. The mini-emulsion system was established with n-hexadecane as hydrophobe. The kinetics of the mini-emulsion polymerization and the characteristics of the particles were examined. Cryogenic transmission electron microscopy (cryo-TEM) analysis of the hybrid emulsions obtained by initiation with the fatty-acid hydroperoxides did not show intraparticle heterogeneity. Initiation by tert-BuOOH on the other hand resulted in the formation of heterogeneous particles as was found by cryo-TEM. This indicates that the use of fatty-acid hydroperoxides resulted in the formation of oil-acrylate product which acted as a compatibilizer. It is concluded that the use of fatty-acid hydroperoxide-initiated mini-emulsion polymerization results in a promising system of combined alkyd-acrylate properties.

OS.CITING REF COUNT: 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS RECORD (19 CITINGS)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1999:151386 CAPLUS

DOCUMENT NUMBER: 130:295769

TITLE: Principal component analysis of measured quantities during degradation of hydroperoxides in oxidized vegetable oils

AUTHOR(S): Heberger, Karoly; Keszler, Agnes; Gude, Michael
CORPORATE SOURCE: Chemical Research Center, Institute for Chemistry of the Hungarian Academy of Sciences, Budapest, H-1525, Hung.SOURCE: Lipids (1999), 34(1), 83-92
CODEN: LPDSAP; ISSN: 0024-4201

PUBLISHER: AOCS Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Decomposition of hydroperoxides in sunflower oil

under strictly oxygen-free conditions was followed by measuring peroxide values against time, absorbance values at 232 and 268 nm, p-anisidine values, and by quant. analyses of volatile products using various additives. The results were arranged in a matrix form and subjected to principal component anal. Three principal components explained 89-97% of the total variance in the data. The measured quantities and the effect of additives were closely related. Characteristic plots showed similarities among the measured quantities (loading plots) and among the additives (score plots). Initial decomposition rate of hydroperoxides and the amount of volatile products formed were similar to each other. The outliers, the absorbance values, were similar to each other but carried independent information from the other quantities. The p-anisidine value (PAV) was a unique parameter. Since PAV behaved differently during the course of hydroperoxide degradation, it served as a kinetic indicator. Most additives were similar in their effects on the mentioned quantities, but two outliers were also observed. Rotation of the principal component axes did not change the dominant patterns observed. The investigations clearly showed which variables were worth measuring to evaluate different additives.

OS.CITING REF COUNT: 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (16 CITINGS)
 REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 6 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
 (2009) on STN

ACCESSION NUMBER: 2009:106839 AGRICOLA
 DOCUMENT NUMBER: IND44237334
 TITLE: A straightforward strategy for the efficient synthesis of acrylate and phosphine oxide-containing vegetable oils and their crosslinked materials.
 AUTHOR(S): De Espinosa, L. Montero; Ronda, J.C.; Gali, M.; C Ldiz, V.
 AVAILABILITY: DNAL (QD471.J6)
 SOURCE: Journal of polymer science. Part A, Polymer chemistry, 2009 Aug. 15 Vol. 47, no. 16 p. 4051-4063
 Publisher: Wiley Subscription Services, Inc., A Wiley Company
 ISSN: 0887-624X
 NOTE: Includes references
 DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
 FILE SEGMENT: Other US
 LANGUAGE: English

AB Phosphorus-containing triglycerides were prepared from a new route that involves the singlet oxygen photo-oxygenation of high oleic sunflower oil and further reduction of the resulting hydroperoxide derivatives to a mixture of secondary allylic alcohols. These allylic alcohols in presence of chlorodiphenylphosphine give allylic phosphinites capable to undergo a [2,3]-sigmatropic rearrangement leading to tertiary phosphine oxides directly linked to triglyceride in a one-pot two-step reaction. The obtained phosphorus-containing triglycerides with different hydroxyl content were activated to polymerization by acrylation and these acrylate triglycerides were radically crosslinked in presence of different amounts of pentaerythritol tetra-acrylate. The thermal, dynamic-mechanical, and flame

retardancy properties of the final materials were evaluated. Thermal and thermo-oxidative degradation was studied by gas chromatography/mass spectrometry, d (British pound)P HR-MAS NMR spectroscopy, and scanning electron microscopy.

- L11 ANSWER 7 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2009) on STN

ACCESSION NUMBER: 2009:19965 AGRICOLA
DOCUMENT NUMBER: IND44152049
TITLE: A new route to acrylate oils: Crosslinking and properties of acrylate triglycerides from high oleic sunflower oil.
AUTHOR(S): de Espinosa, L. Montero; Ronda, J.C.; Gali, M.; C Ldiz, V.
AVAILABILITY: DNAL (QD471.J6)
SOURCE: Journal of polymer science. Part A, Polymer chemistry, 2009 Feb. 15 Vol. 47, no. 4 p. 1159-1167
Publisher: Wiley Subscription Services, Inc., A Wiley Company
ISSN: 0887-624X
NOTE: Includes references
DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
FILE SEGMENT: Other US
LANGUAGE: English

AB Triglycerides with acrylate functionality were prepared from a new route that involves the singlet oxygen photooxygenation of high oleic sunflower oil and further reduction of the resulting hydroperoxide derivatives to a mixture of secondary allylic alcohols. These unsaturated alcohols can be further reduced to saturated alcohols. These two new hydroxyl-containing triglycerides were functionalized as acrylate esters and radically crosslinked in presence of different amounts of pentaerythritol tetraacrylate. The crosslinking reactions were followed by FTIR spectroscopy and the thermal properties of the final materials were evaluated.

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ACCESSION NUMBER: 2008:119125 AGRICOLA
DOCUMENT NUMBER: IND44097742
TITLE: Detection of Primary and Secondary Oxidation Products by Fourier Transform Infrared Spectroscopy (FTIR) and 1H Nuclear Magnetic Resonance (NMR) in Sunflower Oil during Storage.
AUTHOR(S): Guill (flat)n, Mar Ua D.; Goicoechea, Encarnaci dn
AVAILABILITY: DNAL (381 J8223)
SOURCE: Journal of agricultural and food chemistry, 2007 Dec. 26 Vol. 55, no. 26 p. 10729-10736
ISSN: 0021-8561
NOTE: Includes references
DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
FILE SEGMENT: Other US
LANGUAGE: English

AB The oxidation of sunflower oil, stored in closed

receptacles at room temperature for a period of 10 years, was monitored using Fourier transform infrared spectroscopy (FTIR) and ¹H nuclear magnetic resonance (NMR). The objective was to understand the evolution of the oxidation process in sunflower oil under the conditions above mentioned. These techniques provide information about the oxidative status of several oil samples and the primary and some of the secondary oxidation products formed in the oxidation process. The results obtained show that, under these conditions, sunflower oxidation takes place in a different way to that at higher temperatures with aeration. The ¹H NMR spectra show that in the first oxidation stages of the process only hydroperoxides supporting cis,trans-conjugated double bonds are formed and that at more advanced stages hydroperoxides having trans,trans-conjugated double bonds are generated, with the latter always being in a smaller proportion than the former. In addition, the presence of hydroxy derivatives supporting cis,trans-conjugated double bonds among the primary oxidation compounds is shown for the first time. Also, from early oxidation stages onward and unlike the process at 70 °C with aeration, it is noticeable that 4-hydroxy-trans-2-alkenals are formed in much higher proportions than 4-hydroperoxy-trans-2-alkenals. This fact could be associated with the presence of hydroxy derivatives with cis,trans-conjugated double bonds among the primary oxidation products and the limited concentration of oxygen during the oxidation. Furthermore, relationships between some oxidation conditions and the oxidation level of the samples were statistically analyzed.

L11 ANSWER 9 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2009) on STN

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|-------------------|---|
| ACCESSION NUMBER: | 94:49975 AGRICOLA |
| DOCUMENT NUMBER: | IND20402216 |
| TITLE: | Enzymic and autoxidation of lipids in low fat foods: model of linoleic acid in emulsified triolein and vegetable oils. |
| AUTHOR(S): | Roozen, J.P.; Frankel, E.N.; Kinsella, J.E. |
| AVAILABILITY: | DNAL (TX501.F6) |
| SOURCE: | Food chemistry, 1994. Vol. 50, No. 1. p. 39-43 Publisher: Essex : Elsevier Applied Science Publishers. CODEN: FOCHDJ; ISSN: 0308-8146 |
| NOTE: | Includes references |
| PUB. COUNTRY: | England; United Kingdom |
| DOCUMENT TYPE: | Article |
| FILE SEGMENT: | Non-U.S. Imprint other than FAO |
| LANGUAGE: | English |

AB To evaluate problems in novel foods with reduced fat content the linoleic acid model systems used in our previous study were applied to high oleic sunflower oil, triolein and stripped corn oil, in the presence or absence of added alpha-tocopherol. Initial rates of oxygen uptake by enzymic oxidation depended on the emulsion concentrations and not on their fatty acid compositions. Using static headspace gas chromatography a significant difference in the release of hexanal was detected between emulsions rich in either linoleate or oleate. The higher the linoleate content of the emulsion, the higher the conjugated diene absorbance and the amounts of hexanal produced. In the presence of alpha-tocopherol the diene absorbance was increased and the hexanal yields decreased, indicating that alpha-tocopherol retarded the

decomposition of hydroperoxides. On the other hand, the antioxidant effects of alpha-tocopherol were gradually lost during autoxidation tests at 60 degrees C. Therefore, large differences were observed in the amounts and compositions of volatile compounds between emulsions rich in either oleate or linoleate. Lipid concentration, type of lipids and presence of antioxidants are important factors in the oxidative formation of volatile compounds in our models. These factors are expected to impact on the flavour of low fat foods.

L11 ANSWER 10 OF 11 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2005:553442 BIOSIS
DOCUMENT NUMBER: PREV200510338049
TITLE: Measurement of the total hydroperoxides in ozonated sunflower oil using the ferrous oxidation in xylenol orange assay.
Original Title: Determinacion de hidroperoxidos totales en aceite de girasol ozonizado mediante el metodo de oxidacion ferrosa en Xilenol naranja.
AUTHOR(S): Martinez Tellez, Goitybell [Reprint Author]; Hernandez Tapanea, Rebeca; Diaz Gomez, Maritza
CORPORATE SOURCE: Ctr Invest Ozono, Ave 15 and Calle 230, Apartado 6412, Playa, Ciudad De La Ha, Cuba
ozone@infomed.sld.cu
SOURCE: Grasas y Aceites, (APR-JUN 2005) Vol. 56, No. 2, pp. 147-152.
CODEN: GRACAN. ISSN: 0017-3495.
DOCUMENT TYPE: Article
LANGUAGE: Spanish
ENTRY DATE: Entered STN: 7 Dec 2005
Last Updated on STN: 7 Dec 2005

AB Total hydroperoxides (HPT) concentration using the ferrous oxidation in xylenol orange (OFX) assay and peroxide value (IP) using iodometric assay, were determined in sunflower oil samples ozonated at different ozone dosages. The effect of an increasing amount of ozonated sunflower oil was evaluated by assembly assay, where a lineal relationship was obtained between oil amounts from 2 to 17 μ g in the assay and absorbance units measured at 560 nm. The OFX reagent calibration and the extinction coefficient calculation were carried out for HIPT measurement in ozonated samples. The correlation established between IP and the concentration obtained by OFX assay showed a lineal relationship ($r = 99.29$; $r(2) = 98.59$ %). These results confirm that this assay is appropriate for HPT measurement in ozonated sunflower oil.

L11 ANSWER 11 OF 11 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1999:172734 BIOSIS
DOCUMENT NUMBER: PREV199900172734
TITLE: Principal component analysis of measured quantities during degradation of hydroperoxides in oxidized vegetable oils.
AUTHOR(S): Heberger, Karoly [Reprint author]; Keszler, Agnes; Gude, Michael
CORPORATE SOURCE: Chemical Research Center, Institute for Chemistry of the Hungarian Academy of Sciences, H-1525, Budapest, Hungary
Lipids, (Jan., 1999) Vol. 34, No. 1, pp. 83-92. print.
SOURCE: CODEN: LPDSAP. ISSN: 0024-4201.

DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 5 May 1999
 Last Updated on STN: 5 May 1999

AB Decomposition of hydroperoxides in sunflower oil under strictly oxygen-free conditions was followed by measuring peroxide values against time, absorbance values at 232 and 268 nm, para-anisidine values, and by quantitative analyses of volatile products using various additives. The results were arranged in a matrix form and subjected to principal component analysis. Three principal components explained 89-97% of the total variance in the data. The measured quantities and the effect of additives were closely related. Characteristic plots showed similarities among the measured quantities (loading plots) and among the additives (score plots). Initial decomposition rate of hydroperoxides and the amount of volatile products formed were similar to each other. The outliers, the absorbance values, were similar to each other but carried independent information from the other quantities. Para-anisidine value (PAV) was a unique parameter. Since PAV behaved differently during the course of hydroperoxide degradation, it served as a kinetic indicator. Most additives were similar in their effects on the mentioned quantities, but two outliers were also observed. Rotation of the principal component axes did not change the dominant patterns observed. The investigations clearly showed which variables were worth measuring to evaluate different additives.

=> d his

(FILE 'HOME' ENTERED AT 16:05:29 ON 02 NOV 2009)

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

L1 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?
 L2 0 S HYDROXI (3W) HYDROPEROXIDE?
 L3 0 S HYDROXI (5W) HYDROPEROXIDE
 L4 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE
 L5 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009

L6 0 S HYDROXI (5W) PEROXIDE

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009

L7 0 S HYDROXI (W) PEROXIDE
 L8 3 S HYDROPEROSIDE?
 L9 56183 S HYDROPEROXIDE?
 L10 133 S L9 (S) (SUNFLOWER (5W) OIL)
 L11 11 S L10 (L) (OXYGEN OR OZONE)

=> s 19 (L) ozonize?

L12 97 L9 (L) OZONIZE?

=> s 112 (L) sunflower

L13 13 L12 (L) SUNFLOWER

=> s 113 not 111

L14 12 L13 NOT L11

=> d 114 1-12 ibib abs

L14 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2006:686196 CAPLUS
 DOCUMENT NUMBER: 145:229547
 TITLE: Measurement of peroxidic species in ozonized sunflower oil
 AUTHOR(S): Tellez, Goitybell Martinez; Lozano, Oscar Ledea; Gomez, Maritza F. Diaz
 CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research, Havana, Cuba
 SOURCE: Ozone: Science & Engineering (2006), 28(3), 181-185
 CODEN: OZSEDS; ISSN: 0191-9512
 PUBLISHER: Taylor & Francis, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Peroxidic species in ozonized sunflower oil using different methods as iodometric and ferrous oxidation in xylenol orange (FOX) were measured. The necessary reaction time from 2 min to ≤36 h using iodometric assay in ozonized sunflower oil was determined. Peroxide values achieved maximum values at 24 h of reaction time. Hydroperoxides content measured by FOX assay and peroxide value determined at 2 min using iodometric assay had a linear relation (r^2 98.18%), while, at 24 h a logarithmic relation (r^2 98.39%) was shown. Values of hydroperoxides were lower than peroxides values at 24 h and represent 23-44% in all samples of ozonized sunflower oil studied.
 REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2006:520846 CAPLUS
 DOCUMENT NUMBER: 145:82192
 TITLE: Sunflower oil ozonization. Following the reaction by proton nuclear magnetic resonance
 AUTHOR(S): Gomez, Maritza F. Diaz; Sazatornil, Jose A. Gavin
 CORPORATE SOURCE: Departamento de Sustancias Ozonizadas, Centro de Investigaciones del Ozono, Centro Nacional de Investigaciones Cientificas, Havana, Cuba
 SOURCE: Revista CENIC, Ciencias Quimicas (2005), 36(3), 165-168
 CODEN: RCCQER; ISSN: 1015-8553
 PUBLISHER: Centro Nacional de Investigaciones Cientificas
 DOCUMENT TYPE: Journal
 LANGUAGE: Spanish
 AB Ozonized sunflower oil has wide biocidal activities (antibacterial, antiviral, antifungal, antiprotozoal) usable in medicinal practice. Proton NMR can be used to follow the ozone reaction with unsatd. fatty acids. The ozonization of sunflower oil was carried out at 0-107.1 mg ozone/g oil and peroxide index and aldehyde contents were determined. The ozonation reaction was run for 3.5 h; the maximum peroxide number reached with 107.1 mg ozone/g oil was 1202 mEq/kg. Oil samples collected during the ozonation were stored at 2-8°C until 1H-NMR anal. The intensities of fatty acid olefinic proton signals (δ = 5.35 ppm) decreased with increasing ozone concns. but did not disappear completely. The Criegee ozonide (δ = 5.15 ppm) levels obtained at 107.1 mg ozone/g were .apprx.7.4-folds higher than at the

beginning of reaction. The aldehyde protons had only weak signal (δ = 9.63 and 9.74 ppm) in all spectra. The signals of olefinic protons from hydroperoxides (δ = 5.55 ppm) increased with increasing ozone levels. Signals from other oxygenized groups were also assigned. Thus, the higher applied dose of ozone, the higher yield of oxygenated compds. was obtained.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:207272 CAPLUS

DOCUMENT NUMBER: 145:26861

TITLE: Study of Ozonated Sunflower Oil Using 1H NMR and Microbiological Analysis

AUTHOR(S): Diaz, Maritza; Gavin, Jose; Gomez, Magali; Curtielles, Vicente; Hernandez, Frank

CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research, Havana, Cuba

SOURCE: Ozone: Science & Engineering (2006), 28(1), 59-63
CODEN: OZSEDS; ISSN: 0191-9512

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Prior studies have proven that ozonized vegetable oils present a high germicidal power. Ozonization of sunflower oil at different applied ozone dosages was carried out and peroxide and aldehydes indexes along with antimicrobial activity were determined. The reaction products were identified using 1H NMR. The principal signals intensity values were used for following the reaction course between ozone and sunflower oil. The reaction was following up to peroxide index values of 1202 mmol-equi/Kg. The intensities of olefinic proton signals decreased with the gradual increase in ozone concentration but without disappearing completely. The Criegee ozonides obtained at 107.1 mg/g ozone doses were .apprx.3.9-fold higher than that at beginning of the reaction. The aldehyde protons were observed as a weak intensity signal in all the spectra. The signals belonging to olefinic protons from hydroperoxides appeared weak and increased with the increase in ozone doses. Signals from other oxygenated groups were assigned. The highest action spectrum of antimicrobial activity was obtained with the higher peroxide index. It was concluded that at higher applied ozone doses, the higher the antimicrobial activity potential of ozonized sunflower oil.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:640083 CAPLUS

DOCUMENT NUMBER: 143:410533

TITLE: Spectroscopic characterization of ozonated sunflower oil

AUTHOR(S): Diaz, Maritza F.; Sazatornil, Jose A. Gavin; Ledea, Oscar; Hernandez, Frank; Alaiz, Manuel; Garces, Rafael

CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research,

Havana, Cuba

SOURCE: Ozone: Science & Engineering (2005), 27(3), 247-253
CODEN: OZSEDS; ISSN: 0191-9512

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ozonization reactions are very important in vegetable oil chemical since their ozonization products are involved in antimicrobial effect in therapeutical uses for several microbiol. etiol. diseases. Information on the spectroscopic characterization of the products generated by ozonolysis of sunflower oil is limited. In the present study ozonized sunflower oil with 650 mmol-equiv/kg of peroxide index is chemical characterized. Ozonization of sunflower oil produced ozonides, aldehydes and hydroperoxides which were identified by ¹H, ¹³C and two-dimensional ¹H NMR. The virgin sunflower oil and ozonized sunflower oil show very similar ¹H NMR spectra except for the resonances at δ = 9.74 and δ = 9.63 ppm that correspond to both triplet from aldehydic protons, δ = 5.6 ppm (olefinic signal from hydroperoxides), and δ = 5.15 ppm (multiplet from ozonides methylic protons). Other resonance assignments are based on the connectivities provided by the proton scalar coupling consts. These are the following: δ = 3.15 ppm (doublet from methylenic group in a position respect to olefinic proton), δ = 2.45 ppm (multiplet from methylenic group allylic to ozonides methynic protons) and δ = 1.62 ppm (multiplet methylenic protons in β position respect to ozonides methynic protons). From the ¹³C NMR and ¹H-¹³C two-dimensional spectrum of the ozonized sunflower oil, the presence of ozonides was confirmed by the signals δ = 103.43 and δ = 103.49 ppm, resp. The others new signals found in δ = 42.5 and δ = 42.76 ppm confirm the presence of methylenic carbons from hydroperoxides and ozonides. These results indicate that NMR Spectroscopy can provide valuable information about the amount of reaction compds. of ozonized vegetable oil. From the chemical structural elucidation of ozonated sunflower oils, relevant biochem. and chemical information can be achieved.

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2003:865991 CAPLUS

DOCUMENT NUMBER: 140:130053

TITLE: Ozonation of sunflower oil: Spectroscopic monitoring of the degree of unsaturation

AUTHOR(S): Soriano, Nestor U., Jr.; Migo, Veronica P.; Matsumura, Masatoshi

CORPORATE SOURCE: Institute of Applied Biochemistry, University of Tsukuba, Ibaraki, 305-8572, Japan

SOURCE: Journal of the American Oil Chemists' Society (2003), 80(10), 997-1001
CODEN: JAOCA7; ISSN: 0003-021X

PUBLISHER: AOCS Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Consumption of ozone by unsatd. FA moieties of sunflower oil

(SFO) was monitored by ¹H NMR and FTIR spectroscopy. Degradation of linoleate was found to be 1.5 and 1.8 times higher than oleate when SFO was ozonized in the absence and presence of water, resp. Products of ozonation in both cases include aldehydes and ozonides with 1,2,4-trioxolane ring. Hydroxyl-containing compds., which could be carboxylic acids and/or hydroperoxides, were also detected in samples ozonized in the presence of water. The extent of ozonation had very little effect on the aldehyde/ozonide ratio obtained from NMR spectra, especially in the ozonation of neat SFO. The aldehyde/ozonide ratios obtained regardless of the extent of ozonation were 10.5:89.5 and 46.6:53.4 for SFO ozonized in the absence and presence of water, resp.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:818513 CAPLUS

DOCUMENT NUMBER: 139:312467

TITLE: Method for obtaining ozonized oils and vegetable fats and use of said products for pharmaceutical and cosmetic purposes

INVENTOR(S): Moleiro Mirabal, Jesus; Menendez Cepero, Silvia Amparo; Ledea Lozano, Oscar Ernesto; Diaz Gomez, Maritza Felisa; Diaz Rubi, Wilfredo Felix; Fernandez Garcia, Lidia Asela; Lezcano Lastre, Irene de las Mercedes

PATENT ASSIGNEE(S): Centro Nacional de Investigaciones Cientificas (CNIC), Cuba

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Spanish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2003085072 | A1 | 20031016 | WO 2003-CU3 | 20030402 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 2003218602 | A1 | 20031020 | AU 2003-218602 | 20030402 |
| EP 1497401 | A1 | 20050119 | EP 2003-711810 | 20030402 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| BR 2003009246 | A | 20050209 | BR 2003-9246 | 20030402 |
| MX 2004009712 | A | 20050714 | MX 2004-9712 | 20041005 |
| ZA 2004008856 | A | 20051013 | ZA 2004-8856 | 20041102 |

US 20060074129 A1 20060406 US 2005-511025 20050428
 PRIORITY APPLN. INFO.: CU 2002-71 A 20020408
 WO 2003-CU3 W 20030402

AB The oils are produced by ozonization of vegetable oils and fats in a bubble reactor using ozone, O₃, or their mixts. in liquid phase at 30-50° to form the corresponding α -hydroxy-hydroperoxides. The vegetable oils include sunflower, cacao, olive, soybean, jojoba, coconut palm, canola, corn, sesame, thistle, linseed, castor, rice, sugarcane, pumpkin, peanut, and almond oils. The produces are suitable for use in chemical, pharmaceutical, and cosmetics industry, and possess bactericidal, virucidal, parasiticidal, and fungicidal activity and do not show toxicol. or adverse reactions. The ozonized oils can be used in treatment of diseases, in skin revitalizing cosmetics formulations.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:348032 CAPLUS

DOCUMENT NUMBER: 135:111587

TITLE: Volatile components of ozonized sunflower oil "OLEOZON"

AUTHOR(S): Ledea, Oscar; Correa, Teresa; Escobar, Mayhery; Rosado, Aristides; Molerio, Jesus; Hernandez, Carlos; Jardines, Daniel

CORPORATE SOURCE: Ozone Research Center, National Center for Scientific Research, Havana City, Cuba

SOURCE: Ozone: Science & Engineering (2001), 23(2), 121-126
 CODEN: OZSEDS; ISSN: 0191-9512

PUBLISHER: Lewis Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB During the ozonization of the triglycerides and unsatd. fatty acids from sunflower oil, aldehydes and carboxylic acids with 3, 6 and 9 C atoms are obtained, together with hydroperoxides, ozonides and other peroxide species. Some of them present relatively low b.p.s., constituting the volatile fraction of OLEOZON. The volatile fraction was characterized by gas chromatog.-mass spectrometry (GC/MS) and GC combined with 3 different extraction techniques: gaseous purge with cold trap collection, gaseous purge with Tenax adsorption followed by a solvent elution and liquid-liquid extraction

The volatile fraction of OLEOZON is composed by saturated and unsatd. aldehydes and carboxylic acids. Hexanal, nonanal, 3-nonenal and malonaldehyde were the main components of the volatile fraction.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 8 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2006:522155 BIOSIS

DOCUMENT NUMBER: PREV200600532108

TITLE: Measurement of peroxidic species in ozonized sunflower oil.

AUTHOR(S): Tellez, Goitybell Martinez; Lozano, Oscar Ledea; Diaz Gomez, Maritza F. [Reprint Author]

CORPORATE SOURCE: Natl Ctr Sci Res, Ozone Res Ctr, Dept Ozonized Subst, POB 6412, Havana, Cuba
maritza.diaz@cnic.edu.cu

SOURCE: Ozone Science & Engineering, (JUN 2006) Vol. 28, No. 3, pp. 181-185.
CODEN: OZSEDS. ISSN: 0191-9512.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 12 Oct 2006
Last Updated on STN: 12 Oct 2006

AB Peroxidic species in ozonized sunflower oil using different methods as iodometric and ferrous oxidation in xlylenol orange (FOX) were measured. The necessary reaction time from two minutes up to 36 hours using iodometric assay in ozonized sunflower oil was determined. Peroxide values achieved maximum values at 24 hours of reaction time. Hydroperoxides content measured by FOX assay and peroxide value determined at two minutes using iodometric assay had a linear relationship ($r(2) = 98.18\%$), while, at 24 hours a logarithmic relationship ($r(2) = 98.39\%$) was shown. Values of hydroperoxides were lower than peroxides values at 24 hours and represent between 23 and 44% in all samples of ozonized sunflower oil studied.

L14 ANSWER 9 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2006:368724 BIOSIS

DOCUMENT NUMBER: PREV200600373535

TITLE: Study of ozonated sunflower oil H-1 NMR and microbiological analysis.

AUTHOR(S): Diaz, Maritza F. [Reprint Author]; Gavin, Jose A.; Gomez, Magali; Curtielles, Vicente; Hernandez, Frank

CORPORATE SOURCE: Natl Ctr Sci Res, Ozone Res Ctr, Dept Ozonized Substances, POB 6990, Havana 6880, Cuba
maritza.diaz@cnic.edu.cu

SOURCE: Ozone Science & Engineering, (FEB 2006) Vol. 28, No. 1, pp. 59-63.
CODEN: OZSEDS. ISSN: 0191-9512.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 26 Jul 2006
Last Updated on STN: 26 Jul 2006

AB Prior studies have proven that ozonated vegetable oils present a high germicidal power. Ozonation of sunflower oil at different applied ozone dosage was carried out and peroxide and aldehydes indices along with antimicrobial activity were determined. The reaction products were identified using Proton Nuclear Magnetic Resonance Spectroscopy (H-1 NMR). The principal signals intensity values were used for following the reaction course between ozone and sunflower oil. The reaction was following up to peroxide index values of 1202 mmol-equi/kg. The intensities of olefinic proton signals decreased with the gradual increase in ozone concentration but without disappearing completely. The Criegee ozonides obtained at 107.1 mg/g of ozone doses were approximately 3.9-fold higher than that at beginning of the reaction. The aldehyde protons were observed as a weak intensity signal in all the spectra. The signals belonging to olefinic protons from hydroperoxides appeared weak and increased with the increase in ozone doses. Signals from other oxygenated groups were assigned. The highest action spectrum of antimicrobial activity was obtained with the higher peroxide index. It was concluded that at higher applied ozone doses, the higher the

antimicrobial activity potential of ozonized sunflower oil.

L14 ANSWER 10 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2005:341548 BIOSIS
DOCUMENT NUMBER: PREV200510128558
TITLE: Spectroscopic characterization of ozonated sunflower oil.
AUTHOR(S): Diaz, Maritza F. [Reprint Author]; Sazatornil, Jose A. Gavin; Ledea, Oscar; Hernandez, Frank; Alaiz, Manuel; Garces, Rafael
CORPORATE SOURCE: Avenida 230 and 15, Siboney CP 6412, Playa Ciudad Havana, Cuba
SOURCE: ozono@infomed.sld.cu
Ozone Science & Engineering, (JUN 2005) Vol. 27, No. 3, pp. 247-253.
CODEN: OZSEDS. ISSN: 0191-9512.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 31 Aug 2005
Last Updated on STN: 31 Aug 2005

AB Ozonation reactions are very important in vegetable oil chemistry since their ozonation products are involved in antimicrobial effect in therapeutical uses for several microbiological etiology diseases. Information on the spectroscopic characterization of the products generated by ozonolysis of sunflower oil is limited. In the present study ozonized sunflower oil with 650 mmol-equiv/kg of peroxide index is chemically characterized. Ozonation of sunflower oil produced ozonides, aldehydes and hydroperoxides which were identified by H-1, C-13 and two-dimensional H-1 Nuclear Magnetic Resonance (NMR). The virgin sunflower oil and ozonized sunflower oil show very similar 1H NMR spectra except for the resonances at $\delta = 9.74$ and $\delta = 9.63$ ppm that correspond to both triplet from aldehydic protons, $\delta = 5.6$ ppm (olefinic signals from hydroperoxides), and $\delta = 5.15$ ppm (multiplet from ozonides methylic protons). Other resonance assignments are based on the connectivities provided by the proton scalar coupling constants. These are the following: $\delta = 3.15$ ppm (doublet from methylenic group in a position respect to olefinic proton), $\delta = 2.45$ ppm (multiplet from methylenic group allylic to ozonides methynic protons) and $\delta = 1.62$ ppm (multiplet methylenic protons in beta position respect to ozonides methynic protons). From the C-13 NMR and H-1-C-13 two-dimensional spectrum of the ozonized sunflower oil, the presence of ozonides was confirmed by the signals $\delta = 103.43$ and $\delta = 103.49$ ppm, respectively. The others new signals found in $\delta = 42.5$ and $\delta = 42.76$ ppm confirm the presence of methylenic carbons from hydroperoxides and ozonides. These results indicate that NMR Spectroscopy can provide valuable information about the amount of reaction compounds of ozonized vegetable oil. From the chemical structural elucidation of ozonated sunflower oily, relevant biochemical and chemical information can be achieved.

L14 ANSWER 11 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2003:558481 BIOSIS
DOCUMENT NUMBER: PREV200300561555

TITLE: Ozonation of sunflower oil: Spectroscopic monitoring of the degree of unsaturation.
 AUTHOR(S): Soriano, Nestor U. Jr.; Migo, Verónica P.; Matsumura, Masatoshi [Reprint Author]
 CORPORATE SOURCE: Institute of Applied Biochemistry, University of Tsukuba, Tennodai 1-1-1, Tsukuba, Ibaraki, 305-0006, Japan
 SOURCE: aquacel@sakura.cc.tsukuba.ac.jp
 Journal of the American Oil Chemists' Society, (October 2003) Vol. 80, No. 10, pp. 997-1001. print.
 CODEN: JAOCA7. ISSN: 0003-021X.

DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 26 Nov 2003
 Last Updated on STN: 26 Nov 2003

AB Consumption of ozone by unsaturated FA moieties of sunflower oil (SFO) was monitored by ¹H NMR and FTIR spectroscopy. Degradation of linoleate was found to be 1.5 and 1.8 times higher than oleate when SFO was ozonized in the absence and presence of water, respectively. Products of ozonation in both cases include aldehydes and ozonides with 1,2,4-trioxolane ring. Hydroxyl-containing compounds, which could be carboxylic acids and/or hydroperoxides, were also detected in samples ozonized in the presence of water. The extent of ozonation had very little effect on the aldehyde/ozonide ratio obtained from NMR spectra, especially in the ozonation of neat SFO. The aldehyde/ozonide ratios obtained regardless of the extent of ozonation were 10.5:89.5 and 46.6:53.4 for SFO ozonized in the absence and presence of water, respectively.

L14 ANSWER 12 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:286179 BIOSIS
 DOCUMENT NUMBER: PREV200100286179
 TITLE: Volatile components of ozonized sunflower oil "OLEOZON(R)".
 AUTHOR(S): Ledea, Oscar [Reprint author]; Correa, Teresa; Escobar, Mayhery [Reprint author]; Rosado, Aristides; Molerio, Jesus [Reprint author]; Hernandez, Carlos [Reprint author]; Jardines, Daniel [Reprint author]
 CORPORATE SOURCE: Ozone Research Center, National Center for Scientific Research, Ave. 230 y 15, Playa, Havana City, Cuba
 SOURCE: ozono@infomed.sld.cu
 Ozone Science and Engineering, (April, 2001) Vol. 23, No. 2, pp. 121-126. print.
 CODEN: OZSEDS. ISSN: 0191-9512.

DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 13 Jun 2001
 Last Updated on STN: 19 Feb 2002

AB During the ozonation of the triglycerides and unsaturated fatty acids from sunflower oil, aldehydes and carboxylic acids with three, six and nine carbon atoms are obtained, together with hydroperoxides, ozonides and other peroxide species. Some of them present relatively low boiling points, constituting the volatile fraction of ozonized sunflower oil (OLEOZON(R)). In the present work, the volatile fraction was characterized by Gas Chromatography - Mass Spectrometry (GC/MS) and Gas Chromatography (GC) combined with three different extraction techniques: gaseous purge with cold trap collection, gaseous purge with Tenax adsorption followed by a solvent elution and

liquid-liquid extraction. The volatile fraction of OLEOZON(R) is composed by saturated and unsaturated aldehydes and carboxylic acids. Hexanal, nonanal, 3-nonenaldehyde and malonaldehyde were the main components of the volatile fraction.

| | | |
|--|------------|---------|
| => FIL STNGUIDE | | |
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| | ENTRY | SESSION |
| FULL ESTIMATED COST | 103.51 | 172.50 |
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FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

| | |
|----|--|
| L1 | 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE? |
| L2 | 0 S HYDROXI (3W) HYDROPEROXIDE? |
| L3 | 0 S HYDROXI (5W) HYDROPEROXIDE |
| L4 | 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE |
| L5 | 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE |

FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009

| | |
|----|---------------------------|
| L6 | 0 S HYDROXI (5W) PEROXIDE |
|----|---------------------------|

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009

| | |
|-----|-----------------------------------|
| L7 | 0 S HYDROXI (W) PEROXIDE |
| L8 | 3 S HYDROPEROSIDE? |
| L9 | 56183 S HYDROPEROXIDE? |
| L10 | 133 S L9 (S) (SUNFLOWER (5W) OIL) |
| L11 | 11 S L10 (L) (OXYGEN OR OZONE) |
| L12 | 97 S L9 (L) OZONIZE? |
| L13 | 13 S L12 (L) SUNFLOWER |
| L14 | 12 S L13 NOT L11 |

FILE 'STNGUIDE' ENTERED AT 16:28:19 ON 02 NOV 2009

| | |
|----------------------------|-------------------------|
| => s 19 (L) (seed (w) oil) | |
| | 0 HYDROPEROXIDE? |
| | 0 SEED |
| | 6 OIL |
| | 4 OILS |
| | 10 OIL |
| | (OIL OR OILS) |
| L15 | 0 L9 (L) (SEED (W) OIL) |

```
=> s 19 (L) (plant (2w) oil)
      0 HYDROPEROXIDE?
      14 PLANT
      6 PLANTS
      20 PLANT
        (PLANT OR PLANTS)
      6 OIL
      4 OILS
      10 OIL
        (OIL OR OILS)
L16      0 L9 (L) (PLANT (2W) OIL)
```

```
=> s 19 (L) oil?
      0 HYDROPEROXIDE?
      14 OIL?
L17      0 L9 (L) OIL?
```

```
=> s 110 and hydroxi
      0 HYDROPEROXIDE?
      0 SUNFLOWER
      6 OIL
      4 OILS
      10 OIL
        (OIL OR OILS)
      0 L9 (S) (SUNFLOWER (5W) OIL)
      0 HYDROXI
L18      0 L10 AND HYDROXI
```

| | | |
|--|------------|---------|
| => file caplus, agricola, biosis | | |
| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| FULL ESTIMATED COST | 1.47 | 173.97 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | 0.00 | -13.94 |

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FILE 'AGRICOLA' ENTERED AT 16:41:05 ON 02 NOV 2009

FILE 'BIOSIS' ENTERED AT 16:41:05 ON 02 NOV 2009
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```
=> s 19 (seed (W) oil)
MISSING OPERATOR 'L33 (SEED'
```

The search profile that was entered contains terms or
 nested terms that are not separated by a logical operator.

```
=> s 119 (L) (seed (w) oil)
L19 NOT FOUND
The L-number entered could not be found. To see the definition
of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).
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=> s l9 (L) (seed (w) oil)
L19 56 L9 (L) (SEED (W) OIL)

=> d his

(FILE 'HOME' ENTERED AT 16:05:29 ON 02 NOV 2009)

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

L1 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?
L2 0 S HYDROXI (3W) HYDROPEROXIDE?
L3 0 S HYDROXI (5W) HYDROPEROXIDE
L4 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE
L5 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009

L6 0 S HYDROXI (5W) PEROXIDE

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009

L7 0 S HYDROXI (W) PEROXIDE
L8 3 S HYDROPEROSIDE?
L9 56183 S HYDROPEROXIDE?
L10 133 S L9 (S) (SUNFLOWER (5W) OIL)
L11 11 S L10 (L) (OXYGEN OR OZONE)
L12 97 S L9 (L) OZONIZE?
L13 13 S L12 (L) SUNFLOWER
L14 12 S L13 NOT L11

FILE 'STNGUIDE' ENTERED AT 16:28:19 ON 02 NOV 2009

L15 0 S L9 (L) (SEED (W) OIL)
L16 0 S L9 (L) (PLANT (2W) OIL)
L17 0 S L9 (L) OIL?
L18 0 S L10 AND HYDROXI

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:41:05 ON 02 NOV 2009

L19 56 S L9 (L) (SEED (W) OIL)

=> s l19 (L) (oxygen or ozone)
L20 2 L19 (L) (OXYGEN OR OZONE)

=> d l20 1-2 ibib abs

L20 ANSWER 1 OF 2 AGRICOLA Compiled and distributed by the National
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(2009) on STN

| | |
|-------------------|--|
| ACCESSION NUMBER: | 2009:84009 AGRICOLA |
| DOCUMENT NUMBER: | CAIN709036134 |
| TITLE: | Stability of crude sunflower oils to autoxidation and to seed aging. |
| AUTHOR(S): | Mikolajczak, K.L.; Smith, C.R.; Wolff, I.A. |
| AVAILABILITY: | DNAL (307.8 J82) |
| SOURCE: | J Amer Oil Chem Soc, p. 24-25 |
| DOCUMENT TYPE: | Article |
| FILE SEGMENT: | Other US |
| LANGUAGE: | English |

L20 ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:468775 BIOSIS
 DOCUMENT NUMBER: PREV200200468775
 TITLE: Dietary lipid peroxidation products and DNA damage in colon carcinogenesis.
 AUTHOR(S): Kanazawa, Ayako; Sawa, Tomohiro; Akaike, Takaaki; Maeda, Hiroshi [Reprint author]
 CORPORATE SOURCE: Department of Microbiology, Kumamoto University School of Medicine, Honjo 2-2-1, Kumamoto, 860-0811, Japan
 SOURCE: European Journal of Lipid Science and Technology, (July, 2002) Vol. 104, No. 7, pp. 439-447. print.
 ISSN: 1438-7697.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 4 Sep 2002
 Last Updated on STN: 4 Sep 2002

=> d his

(FILE 'HOME' ENTERED AT 16:05:29 ON 02 NOV 2009)

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

L1 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?
 L2 0 S HYDROXI (3W) HYDROPEROXIDE?
 L3 0 S HYDROXI (5W) HYDROPEROXIDE
 L4 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE
 L5 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009

L6 0 S HYDROXI (5W) PEROXIDE

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009

L7 0 S HYDROXI (W) PEROXIDE
 L8 3 S HYDROPEROSIDE?
 L9 56183 S HYDROPEROXIDE?
 L10 133 S L9 (S) (SUNFLOWER (5W) OIL)
 L11 11 S L10 (L) (OXYGEN OR OZONE)
 L12 97 S L9 (L) OZONIZE?
 L13 13 S L12 (L) SUNFLOWER
 L14 12 S L13 NOT L11

FILE 'STNGUIDE' ENTERED AT 16:28:19 ON 02 NOV 2009

L15 0 S L9 (L) (SEED (W) OIL)
 L16 0 S L9 (L) (PLANT (2W) OIL)
 L17 0 S L9 (L) OIL?
 L18 0 S L10 AND HYDROXI

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:41:05 ON 02 NOV 2009

L19 56 S L9 (L) (SEED (W) OIL)
 L20 2 S L19 (L) (OXYGEN OR OZONE)

=> s l19 not l13

L21 56 L19 NOT L13

=> d l21 1-10 ibib abs

L21 ANSWER 1 OF 56 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2009:70674 CAPLUS
 TITLE: Oil from Tea Seed by Supercritical Fluid Extraction
 AUTHOR(S): Demirbas, A.
 CORPORATE SOURCE: Sila Science, Trabzon, Turk.
 SOURCE: Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (2009), 31(3), 217-222
 CODEN: ESPACB; ISSN: 1556-7036

PUBLISHER: Taylor & Francis, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Green tea seed oil (*Camellia sinensis* L. Kuntze) samples were used in this work. The tea seed oil contains more than 84% unsatd. fatty acid, such as oleic acid, linoleic acid, and linolenic acid. The most current research on oil extraction is focused on producing biodiesel from vegetable oils. The biodiesel from tea seed oil in itself is not significantly different from biodiesel produced from vegetable oils. Tea seed oils as well, as different vegetable oils, have lower pour point and lower viscosity. Supercrit. fluid extraction of tea seed oil was performed to study the effects of various parameters such as pressure, temperature, extraction time, and solvent (methanol) on the yield

and composition of the oil. Under supercrit. conditions, partial thermal degradation occurs on the double bonds of unsatd. aliphatic carbon chains in fatty acids. Oxidation of Me esters resulted in the formation of hydroperoxides. Unsatd. fatty acid, such as oleic acid, linoleic acid, linolenic acid, and gadoleic, reach as high as 85.6%. The content of linoleic and linolenic acids in the tea seed oil is 20.5%, while these acids account for 15.9% of the total fatty acids in the supercrit. methanol exts. Partial thermal degradation of the linoleic and linolenic acids may occur in the supercrit. methanol extraction due to high temperature (< 513 K).

The high temperature had a much greater effect on the polyunsatd. fatty acids than saturated and mono saturated fatty acids.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 2 OF 56 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2008:1307595 CAPLUS
 DOCUMENT NUMBER: 151:362853
 TITLE: Investigation of the Parameters Affecting the Cetane Number of Biodiesel
 AUTHOR(S): Wadumesthrige, Kapila; Smith, Jeremiah C.; Wilson, John R.; Salley, Steven O.; Ng, K. Y. Simon
 CORPORATE SOURCE: Department of Chemical Engineering and Materials Science, Wayne State University, Detroit, MI, 48202, USA
 SOURCE: Journal of the American Oil Chemists' Society (2008), 85(11), 1073-1081
 CODEN: JAOCA7; ISSN: 0003-021X
 PUBLISHER: Springer
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The cetane number is the most significant property for measuring the ignition quality of fuels for compression ignition diesel engines. The derived cetane number (DCN) of several types of biodiesel, biodiesel components and ultra-low S diesel (ULSD) was determined using an Ignition Quality Tester (IQT). The chemical structure of FAME leads to a higher cetane number of biodiesel compared to ULSD. The contribution to DCN from minor components present in biodiesel is not significant. Oxidation of biodiesel samples results in higher DCN values, depending on the conditions of oxidation. A >25% increase was observed when oxidation was carried out in a way to retain volatile oxidative products such as carboxylic acids and aldehydes. Accelerated oxidation of cotton seed oil (CSO) biodiesel at 110° and 10 L/min air flow rate after 210 min resulted in a loss of 14% of the FAME content, of which 10% can be attributed to the oxidation of Me linoleate (C18:2), whereas oxidation of soy bean oil (SBO) biodiesel resulted in a loss of 21% total FAME after 210 min. A significant amount of Me linolenate (C18:3) remained un-reacted after 210 min of oxidation. Ambient oxidation of distilled biodiesel samples resulted in a high cetane number. Oxidative products such as aldehydes, hydroperoxides and oligomers of FAME are probably responsible for this higher DCN. This study enhances the understanding of the effect of composition on the cetane number of biodiesel as well as the effect of oxidative aging on both biodiesel composition and the resultant DCN.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 3 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:844642 CAPLUS

DOCUMENT NUMBER: 150:306778

TITLE: Oxidation reactions of some natural volatile aromatic compounds: anethole and eugenol

AUTHOR(S): Elgendy, E. M.; Khayyat, S. A.

CORPORATE SOURCE: Faculty of Specific Education, Mansoura University, Mansoura, Egypt

SOURCE: Russian Journal of Organic Chemistry (2008), 44(6), 823-829

PUBLISHER: CODEN: RJOCEQ; ISSN: 1070-4280

DOCUMENT TYPE: Pleiades Publishing, Ltd.

LANGUAGE: Journal

AB Trans-Anethole [1-methoxy-4-(trans-prop-1-en-1-yl)benzene] was isolated from anise seed oil. Its photochem. oxidation with H2O2 gave the corresponding epoxide together with 4-MeOC6H4CHO. The thermal oxidation of trans-anethole with 3-ClC6H4CO3H at room temperature resulted in

the formation of a dimeric epoxide, 2,5-bis(4-methoxyphenyl)-3,6-dimethyl-1,4-dioxane, as the only product. Photochem. oxygenation of trans-anethole in the presence of tetraphenylporphyrin, Rose Bengal, or chlorophyll as sensitizer led to a mixture of 1-(4-methoxyphenyl)prop-2-en-1-yl hydroperoxide and 4-MeOC6H4CHO. Eugenol was isolated from clove oil. It was converted into 2-methoxy-4-(prop-2-en-1-yl)phenyl hydroperoxide by oxidation with H2O2 under irradiation. Thermal oxidation of eugenol with 3-ClC6H4CO3H at room temperature produced 2-methoxy-4-(oxiran-2-ylmethyl)phenol, while sensitized photochem. oxygenation (using Rose Bengal or chlorophyll) gave 4-hydroperoxy-2-methoxy-4-(prop-2-en-1-yl)cyclohexa-2,5-dien-1-one.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 4 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:541168 CAPLUS

DOCUMENT NUMBER: 148:494401

TITLE: Seed roasting improves the oxidative stability of canola (B. napus) and mustard (B. juncea) seed oils
 AUTHOR(S): Wijesundera, Chakra; Ceccato, Claudio; Pagan, Peter; Shen, Zhiping

CORPORATE SOURCE: CSIRO Food Science Australia, Werribee, Victoria, Australia

SOURCE: European Journal of Lipid Science and Technology (2008), 110(4), 360-367

CODEN: EJLTFM; ISSN: 1438-7697

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Animal fats and partially hydrogenated vegetable oils (PHVO) have preferentially been used for deep-frying of food because of their relatively high oxidative stability compared to natural vegetable oils. However, animal fats and PHVO are abundant sources of saturated fatty acids and trans fatty acids, resp., both of which are detrimental to human health. Canola (Brassica napus) is the primary oilseed crop currently grown in Australia. Canola quality Indian mustard (Brassica juncea) is also being developed for cultivation in hot and low-rainfall areas of the country where canola does not perform well. A major impediment to using these oils for deep-frying is their relatively high susceptibility to oxidation, and so any processing interventions that would improve the oxidative stability would increase their prospects of use in com. deep-frying. The oxidative stability of both B. napus and B. juncea crude oils can be improved dramatically by roasting the seeds (165 °C, 5 min) prior to oil extraction. Roasting did not alter the fatty acid composition or the tocopherol content of the oils. The enhanced oxidative stability of the oil, solvent-extracted from roasted seeds, is probably due to 2,6-dimethoxy-4-vinylphenol produced by thermal decarboxylation of the sinapic acid naturally occurring in the canola seed.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 5 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:801825 CAPLUS

DOCUMENT NUMBER: 150:195314

TITLE: Thermal degradation of fatty acids in biodiesel production by supercritical methanol

AUTHOR(S): Demirbas, Ayhan

CORPORATE SOURCE: Sila Science, Trabzon, TR-61035, Turk.

SOURCE: Energy Exploration & Exploitation (2007), 25(1), 63-70

CODEN: EEEXDU; ISSN: 0144-5987

PUBLISHER: Multi-Science Publishing Co. Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thermal degradation of the fatty acids of sunflower seed oil during biodiesel production by supercrit. methanol method was investigated. The term biodiesel means the monoalkyl esters of long chain fatty acids made from biolipids such as vegetable oils, animal fats, tall oil or algae oils. The oils and fats contain polyunsatd. fatty acid chains that their

double bonds have highly chemical reactivity. The thermal degradation occurs

on

the double bonds of unsatd. aliphatic carbons chains in fatty acids. Oxidation of biodiesel is results in the formation of hydroperoxides. The formation of the hydroperoxide follows a well known peroxidn. chain mechanism. The olefinic unsatd. fatty acid oxidation is a multi-step reaction process where primary products decompose and chemical interact with each other to form numerous secondary oxidation products. The content of linoleic acid in the sunflower seed oil is 72.4%, while the linoleic acid account for 62.5% of the total fatty acids in the biodiesel. The proportion of the linoleic acid is lower in the biodiesel obtained by supercrit. methanol transesterification method. The viscosity of biodiesel increases with increasing of thermal degradation degree due to the trans isomer formation on double bonds. The decomposition of biodiesel and its corresponding fatty acids linearly increases from 293 K° to 625 K°. The densities of biodiesel fuels decreased linearly with temperature from 293 K° to 575 K°. The combustion heat of biodiesel partially decreases with increasing of thermal degradation degree.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 6 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:44544 CAPLUS

DOCUMENT NUMBER: 146:367854

TITLE: Determination of total hydroperoxides in oxidized vegetable oils based on triphenylphosphine oxidation using electron ionization mass spectrometry

AUTHOR(S): Mochida, Yoshiyuki; Nakamura, Shigeo
CORPORATE SOURCE: Dep. of Materials and Life Chemistry, Kanagawa Univ., Yokohama, Japan

SOURCE: Journal of the Mass Spectrometry Society of Japan (2006), 54(6), 235-242
CODEN: JMSJEX; ISSN: 1340-8097

PUBLISHER: Nippon Shitsuryo Bunseki Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method for determining the peroxide value (POV) of oxidized vegetable oil using electron ionization mass spectrometry (EI-MS) was developed. The range of POV measured by the method developed in this study is 0-100 meq/kg, which is a matter of interest for those involved in the vegetable oil industry. This method consists of three steps: the hydroperoxides in the sample oxidize triphenylphosphine (TPP), which produces triphenylphosphine oxide (TPPO); the TPPO concentration in the reaction solution is determined by EI-MS; and the POV of the sample is obtained from the calibration curve, which correlates the POV from the iodometric method with the TPPO concentration. The oxidation reaction of TPP was obtained

by

mixing TPP, oxidized vegetable oil, 3,5-di-t-butyl-4-hydroxy toluene (antioxidant), and the mixed solvent of chloroform and methanol in a test tube. The test tube was tightly sealed and then stored in the dark at 60°C for 60 min. The resultant solution was poured into a test tube for the EI and ionized using an ionization energy of 20 eV. The ion strength of the TPPO dehydride mol., by which the TPPO concentration was obtained, was determined using the maximum value of the selected ion current chromatogram peak. The calibration curve was prepared from the POV obtained from the iodometric method and the TPPO concentration obtained by this method, using a moderately oxidized vegetable oil. For samples of air-oxidized

cotton seed oil, olive oil, soybean oil, and safflower oil, the POV obtained from the TPPO concentration using the calibration curve showed good agreement with that obtained by the iodometric method.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 7 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:499987 CAPLUS

DOCUMENT NUMBER: 143:228751

TITLE: Triacylglycerol hydroperoxides not detected in pig small intestinal epithelial cells after a diet rich in oxidized triacylglycerols

AUTHOR(S): Suomela, Jukka-Pekka; Ahotupa, Markku; Kallio, Heikki

CORPORATE SOURCE: Departments of Biochemistry and Food Chemistry, University of Turku, Turku, FI-20014, Finland

SOURCE: Lipids (2005), 40(4), 349-353
CODEN: LPDSAP; ISSN: 0024-4201

PUBLISHER: AOCS Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The presence of TAG hydroperoxides in the epithelial cells of the small intestines in growing swine was studied after they had consumed a diet rich in either nonoxidized or oxidized sunflower seed oil (PV in oils, 1 and 190 mequiv O2/kg, resp.). To obtain mol.-level information on the oxidized TAG structures, a new approach based on TLC and HPLC-electrospray ionization-MS was used in the anal. of the samples. TAG hydroperoxides were not detected in the small intestinal mucosa or adipose tissue of either group, whereas TAG hydroxides, ketones, and epoxides were detected in all samples. The results suggest that dietary TAG hydroperoxides do not lead to the appearance of these mols. in the tissues.

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 8 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:101702 CAPLUS

DOCUMENT NUMBER: 142:390975

TITLE: Enzyme-catalyzed modification of oilseed materials to produce eco-friendly products

AUTHOR(S): Hayes, Douglas G.

CORPORATE SOURCE: Department of Biosystems Engineering and Environmental Science, University of Tennessee, Knoxville, TN, 37996-4531, USA

SOURCE: Journal of the American Oil Chemists' Society (2004), 81(12), 1077-1103

CODEN: JAOCA7; ISSN: 0003-021X

PUBLISHER: AOCS Press

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review, with refs. Novel products produced from seed oil materials (TAG, phospholipids, and minor components such as tocopherols, sterols, stanols, and fatty acyl esters of the latter two) by enzyme-mediated purification or chemical modification are reviewed. The primary

focus is on "value-added products" of current and potential use (particularly in the food, cosmetics, and pharmaceutical industries) that require the selectivity of enzymes and mild operating conditions, the latter being beneficial for polyunsatd. and oxygenated acyl groups. The paper briefly reviews the biochem. of enzymes in lipid modification (lipases, phospholipases, and lipoxygenases) and discusses and assesses the current and future applications, current state of the art, and areas for future research for the following enzyme-mediated processes: isolation of polyunsatd. and oxygenated FFA; formation of structured TAG as nutraceuticals; formation of MAG, saccharide-FA esters, and other polyhydric alc. ester as emulsifiers and surfactants; isolation and/or modification of tocopherols and sterols as antioxidants; formation of hydroperoxides as chemical intermediates; and modification of phospholipids for use in liposomes.

OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)
 REFERENCE COUNT: 402 THERE ARE 402 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 9 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:1013354 CAPLUS

DOCUMENT NUMBER: 140:252479

TITLE: Tentative identification and quantification of TAG core aldehydes as dinitrophenylhydrazones in autoxidized sunflower seed oil using reversed-phase HPLC with electrospray ionization MS

AUTHOR(S): Sjoevall, Olli; Kuksis, Arnis; Kallio, Heikki
 CORPORATE SOURCE: Banting and Best Department of Medical Research, University of Toronto, M5G 1L6, Can.

SOURCE: Lipids (2003), 38(11), 1179-1190

CODEN: LPDSAP; ISSN: 0024-4201

PUBLISHER: AOCS Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The mol. species of TAG core aldehydes (aldehydes still esterified to parent mols.) were detected and quantified in dietary-quality sunflower seed oil autoxidized for 0-18 d at 60° in the dark. The analyses were performed by reversed-phase HPLC with UV (358 nm) absorption or light scattering and electrospray ionization-MS (ESI/MS) detection following preparation of the dinitrophenylhydrazone derivs. Aldehyde production, as estimated by UV and ESI/MS, increased gradually over the 18-d period following a rapid initial destruction of the core aldehydes accumulated during storage of the com. oil at 10° for 3 mon. The contents of hydroperoxides and hydroperoxide core aldehyde combinations were estimated to account for about 5% of total TAG, quantified as area in the chromatog. trace, after 18 d of autoxidn. as estimated by an evaporative light scattering detector (ELSD). The major species of core aldehydes were tentatively identified as 9-oxononanoyl (70%)-, 12-oxo-9,10-epoxydodecenoyl (10%)-, and 13-oxo-9,11-tridecadienoyl (5%)-containing acylglycerols, plus smaller amts. of simple and mixed chain-length dialdehydes, and hydroxy and epoxy monoaldehyde-containing acylglycerols (15% of total). Quant., the core aldehydes made up 2-12 g/kg of oil by UV detection and 2-9 g/kg of oil by ESI/MS detection, whereas the hydroperoxides measured in the unredacted state by HPLC with ELSD were estimated at 200 g/kg after 18 d of autoxidn. The major hydroperoxides of sunflower seed oil were as

previously identified.
REFERENCE COUNT: 33

THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 10 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:892738 CAPLUS

DOCUMENT NUMBER: 139:366613

TITLE: Intergrated chemical processes for industrial
utilization of seed oils

INVENTOR(S): Lysenko, Zenon; Maughon, Bob R.; Bicerano, Jozef;
Burdett, Kenneth A.; Christenson, Christopher P.;
Cummins, Clark H.; Dettloff, Marvin L.; Maher, John
Michael; Schrock, Alan K.; Thomas, P. J.; Varjian,
Richard D.; White, Jerry E.

PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA

SOURCE: PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|-------------|
| WO 2003093215 | A1 | 20031113 | WO 2003-US11852 | 20030417 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2482654 | A1 | 20031113 | CA 2003-2482654 | 20030417 |
| AU 2003241300 | A1 | 20031117 | AU 2003-241300 | 20030417 |
| AU 2003241300 | B2 | 20081016 | | |
| EP 1501784 | A1 | 20050202 | EP 2003-731030 | 20030417 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| BR 2003009359 | A | 20050222 | BR 2003-9359 | 20030417 |
| CN 1649822 | A | 20050803 | CN 2003-809648 | 20030417 |
| CN 100379716 | C | 20080409 | | |
| JP 2005523931 | T | 20050811 | JP 2004-501355 | 20030417 |
| CN 101172952 | A | 20080507 | CN 2007-10194696 | 20030417 |
| RU 2352549 | C2 | 20090420 | RU 2004-134602 | 20030417 |
| US 20050154221 | A1 | 20050714 | US 2004-508805 | 20040923 |
| US 7576227 | B2 | 20090818 | | |
| IN 2004CN02420 | A | 20070907 | IN 2004-CN2420 | 20041026 |
| MX 2004010803 | A | 20050307 | MX 2004-10803 | 20041029 |
| US 20090143544 | A1 | 20090604 | US 2008-328868 | 20081205 |
| PRIORITY APPLN. INFO.: | | | US 2002-376611P | P 20020429 |
| | | | CN 2003-809648 | A3 20030417 |
| | | | WO 2003-US11852 | W 20030417 |
| | | | US 2004-508805 | A1 20040923 |

OTHER SOURCE(S): MARPAT 139:366613

AB Integrated processes of preparing industrial chems. starting from seed oil feedstock compns. containing one or more unsatd. fatty acids or unsatd. fatty acid esters, which are essentially free of metathesis catalyst poisons, particularly hydroperoxides; metathesis of the feedstock composition with a lower olefin, such as ethylene, to form a reduced chain olefin, preferably, a reduced chain α -olefin, and a reduced chain unsatd. acid or ester, preferably, a reduced chain, α,ω -unsatd. acid or ester. The reduced chain unsatd. acid or ester may be (trans)esterified to form a polyester polyolefin, which may be epoxidized to form a polyester polyepoxide. The reduced chain unsatd. acid or ester may be hydroformylated with reduction to produce an, α,ω -hydroxy acid or, α,ω -hydroxy ester, which may be (trans)esterified with a polyol to form an α,ω -polyester polyol. Alternatively, the reduced chain unsatd. acid or ester may be hydroformylated with reductive amination to produce an, α,ω -amino acid or, α,ω -amino ester, which may be (trans)esterified to form an, α,ω -polyester polyamine.

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 121 11-21 ibib abs

L21 ANSWER 11 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:555666 CAPLUS

DOCUMENT NUMBER: 137:121599

TITLE: Genes for enzymes of polyunsaturated fatty acid synthesis of Phaeodactylum and their use in engineering seed oil composition

INVENTOR(S): Lerchl, Jens; Renz, Andreas; Heinz, Ernst; Domergue, Frederic; Zaehring, Ulrich

PATENT ASSIGNEE(S): Basf Plant Science G.m.b.H., Germany

SOURCE: PCT Int. Appl., 224 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| WO 2002057465 | A2 | 20020725 | WO 2002-EP462 | 20020118 |
| WO 2002057465 | A3 | 20030612 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| DE 10102337 | A1 | 20020725 | DE 2001-10102337 | 20010119 |

| | | | | |
|--|----|----------|-----------------|----------|
| CA 2435081 | A1 | 20020725 | CA 2002-2435081 | 20020118 |
| AU 2002238507 | A1 | 20020730 | AU 2002-238507 | 20020118 |
| EP 1356067 | A2 | 20031029 | EP 2002-704657 | 20020118 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, | | | | |
| IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| BR 2002006598 | A | 20040622 | BR 2002-6598 | 20020118 |
| JP 2004530418 | T | 20041007 | JP 2002-558517 | 20020118 |
| US 20040053379 | A1 | 20040318 | US 2003-250553 | 20030702 |
| NO 2003003239 | A | 20030916 | NO 2003-3239 | 20030717 |

PRIORITY APPLN. INFO.:

| | | |
|------------------|---|----------|
| DE 2001-10102337 | A | 20010119 |
| WO 2002-EP462 | W | 20020118 |

AB Genes for enzymes of biosynthesis of polyunsatd. fatty acids of *Phaeodactylum tricornutum* are cloned and characterized for use in the modification of fatty acid profiles of seed oils. Polycistronic expression constructs for these genes using seed-specific promoters are described. The invention further relates to transgenic plants, transformed by means of said expression cassettes, or vectors, cultures, parts or transgenic propagations derived therefrom and the use of the above as feedstuff, animal feedstuff, seed, pharmaceuticals, fine chems. or industrial raw material. Genes for enzymes of polyunsatd. fatty acid metabolism of *Phaeodactylum tricornutum* were identified by sequence homol. Expression of the genes for a $\Delta 5$ - and a $\Delta 6$ -desaturase in yeast resulted in an increased content of long chain (C18-20) polyunsatd. fatty acids. The spectrum of polyunsatd. fatty acids was influenced by fatty acids in the culture medium.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 12 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:102822 CAPLUS

DOCUMENT NUMBER: 136:380064

TITLE: Sedanolide, a natural phthalide from celery seed oil: effect on hydrogen

peroxide and tert-Butyl hydroperoxide

-induced toxicity in HepG2 and CaCo-2 human cell lines

AUTHOR(S): Woods, J. A.; Jewell, C.; O'Brien, N. M.

CORPORATE SOURCE: Nutritional Sciences, Department of Food Science, Food Technology and Nutrition, University College, Cork, Ire.

SOURCE: In Vitro & Molecular Toxicology (2001), 14(3), 233-240

CODEN: IVMTFJ; ISSN: 1097-9336

PUBLISHER: Mary Ann Liebert, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Sedanolide is a natural compound occurring in edible umbelliferous plants. Celery seed oil, a significant source of sedanolide, is used as an herbal remedy to treat inflammatory-associated conditions such as gout and rheumatism. The objective of this study was to assess the potential protective properties of sedanolide against hydrogen peroxide (H2O2)- and tert-Bu hydroperoxide (tBOOH)-induced toxicity in HepG2 and CaCo-2 cells. Viability of HepG2 and CaCo-2 cells was unaffected by a 24-h exposure to sedanolide (7-500 μ M), however, when the cells were cultured in sedanolide-free medium for a further two cell cycles (72 h), a decrease in cell viability was observed for HepG2 cells previously exposed to 500 μ M of the compound. Cells pretreated with

sedanolide (100 μ M for 24 h) and exposed to either H₂O₂ or tBOOH did not exhibit statistically significant difference in viability from controls. A significant increase ($p < 0.05$) in DNA strand breaks, as measured by the comet assay, was observed in HepG2 but not CaCo-2 cells following a 24-h incubation with 500 μ M sedanolide. Sedanolide did not modulate H₂O₂- and tBOOH-induced DNA damage. Sedanolide is relatively nontoxic to cells in culture, however, the protection it afforded against H₂O₂- and tBOOH-induced toxicity was not statistically significant.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD
(5 CITINGS)
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 13 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:698614 CAPLUS

DOCUMENT NUMBER: 136:215651

TITLE: Storage ability of some cucurbitaceae seed oils as affected by container type

AUTHOR(S): Allam, A. G.; Hashem, H. A.; El-Agaïmy, M. A.; Arafat, S. M.

CORPORATE SOURCE: Dep. of Food Sci., Al-Azhar Univ., Egypt

SOURCE: Al-Azhar Journal of Pharmaceutical Sciences (2001), 27, 56-64

CODEN: AAJFFT; ISSN: 1110-1644

PUBLISHER: Al-Azhar University, Faculty of Pharmacy

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pumpkin and squash seed oils, compared with the sunflower seed oil, were used. The oils were packed in plastic bottles (HDPE), transparent and brown glass bottles and stored at room temperature (25°C). Effect of containers and storage on different properties were studied. Color of oils samples had slightly decreased during storage period in the containers. Refractive index of oils was not significantly increased in different containers stored for 6 mo. Free fatty acids (% as oleic acid) increased with the progression of storage period. The min. increment of FFA content was found in the oils packed in brown glass container. Peroxide value was increased with the increasing storage period. The lowest increase was noticed of oils packed in brown glass. While, the highest increase in peroxide value is found of oils packed in plastic containers. The oil absorption at 232 and 270 nm in the UV region increased in the all oils packed. The lowest increase was obtained of oils backed in brown glass. While opposite trend was found with the oils packed in plastic containers. Iodine value was decreased insignificantly during storage. TBA was increased in all containers types. Oxidative stability was decreased during storage period in the all oils packed. The brown glass bottles are more effective for protection of oils during storage.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 14 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:202517 CAPLUS

DOCUMENT NUMBER: 132:335819

TITLE: Long-term behavior of oil-based varnishes and paints. Fate of hydroperoxides in drying oils

AUTHOR(S): Mallegol, Jacky; Gardette, Jean-Luc; Lemaire, Jacques

CORPORATE SOURCE: Laboratoire de Photochimie Moléculaire et

Macromoleculaire, UMR CNRS 6505, Universite Blaise Pascal (Clermont II), Ensemble Scientifique des Cezeaux, Aubiere, F-63177, Fr.

SOURCE: Journal of the American Oil Chemists' Society (2000), 77(3), 249-255
CODEN: JAOCA7; ISSN: 0003-021X

PUBLISHER: AOCS Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The thermal stability of linseed oil and poppy-seed oil hydroperoxides in a temperature range from ambient to 120°C has been investigated on the basis of iodometric titration. The peroxide value (PV) vs. oxidation time curves show similar developments at the six temps. chosen for the expts. These curves are characterized by a fast increase in the PV up to a maximal value, followed by a decrease in the PV at a lower rate. The maximal PV is higher when the curing temperature is lowered. This result indicates thermal decomposition of the hydroperoxides. The peroxy crosslink concentration in the dried oil film varies similarly to

the hydroperoxide concentration. This indicates that, for dried films, the network is almost totally constituted of ether and C-C crosslinks. A comparison of the rates of peroxide decomposition under thermolytic and thermooxidative conditions has evidenced that the only homolytic scission of the O-O bonds cannot justify the decrease of the PV in thermooxidn. Another mechanism accounting for hydroperoxide decomposition, based on an induced decomposition of the hydroperoxides, has been proposed. These results have permitted completing the description of the curing mechanisms of drying oils.

OS.CITING REF COUNT: 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (16 CITINGS)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 15 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1999:590769 CAPLUS

DOCUMENT NUMBER: 131:335965

TITLE: Analytical evaluation of polyunsaturated fatty acids degradation during thermal oxidation of edible oils by Fourier transform infrared spectroscopy

AUTHOR(S): Moya Moreno, M. C. M.; Mendoza Olivares, D.; Amezcua Lopez, F. J.; Gimeno Adelantado, J. V.; Bosch Reig, F.

CORPORATE SOURCE: Faculty of Chemistry, Department of Analytical Chemistry, University of Valencia, Valencia, Spain

SOURCE: Talanta (1999), 50(2), 269-275
CODEN: TLNTA2; ISSN: 0039-9140

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The oxidative deterioration of polyunsatd. fatty acids (PUFAs) in culinary oils and fats during episodes of heating associated with normal usage (80-300°C, 20-40 min) has been monitored by Fourier transform IR spectroscopy (FTIR). The thermal oxidation of PUFAs is a free radical chain reaction, in which hydroperoxides are generally recognized as the primary major products. Hydroperoxides of PUFAs are easily decomposed into a very complex mixture of secondary products with the decrease in unsatn. The oxidative advance of PUFAs during heating was studied by the determination of unsatn. percentage at different temps. and heating times.

Oils frequently used in food frying such as olive oil, sunflower oil, corn oil and seeds oil (sunflower, safflower and canola seed) were studied. The results show there is a decrease in unsatn. starting at 150°C and becoming more pronounced at temps. around 250°C. The following variations were found in the unsatn. percentage, expressed as Me linoleate, between the original sample and the sample heated at 300°C for 40 min: olive oil (19-6%), sunflower oil (29-12%), corn oil (28-18%) and seeds oil (23-11%). This variation in unsatn. grade provides evidence of the transformation of essential PUFAs and subsequent decrease in the oils' nutritional value. The internal standard method is suitably precise when the n-valeronitrile is used as standard as shown by the 1-2% relative standard deviation (R.S.D.)

found

for seven replicates.

OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 16 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1998:97894 CAPLUS
DOCUMENT NUMBER: 128:241006
ORIGINAL REFERENCE NO.: 128:47637a,47640a
TITLE: Biocatalytic transformation of fats and oils
AUTHOR(S): Foglia, T. A.; Piazza, G. J.; Sonnet, P. E.; Nunez, A.
CORPORATE SOURCE: USDA, ARS, Eastern Regional Research Center, Philadelphia, PA, 19118, USA
SOURCE: Oils-Fats-Lipids 1995, Proceedings of the World Congress of the International Society for Fat Research, 21st, The Hague, Oct. 1-6, 1995 (1996), Meeting Date 1995, Volume 1, 69-73. P.J. Barnes & Associates: Bridgwater, UK.
CODEN: 65QOAT
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English

AB A review, with .apprx.30 refs. Over the past several years our laboratory has been evaluating the application of biocatalysis to fats and oils. An example of the types of biocatalytic reactions studied include the regiospecific determination of triacylglycerol structures using 1,3-specific lipases. Other lipase reactions that have been successfully applied to fats and oils include the exploitation of the fatty acid selectivities of lipases for obtaining enriched erucic acid and γ -linolenic acid (GLA) fractions from rape seed oil and borage seed oil fatty acids, and for reducing the α -linolenic acid (ALA) content of soybean oil. Another biocatalytic process that we have studied employed the enzyme lipoxigenase for the positional and enantio selective introduction of the hydroperoxide functionality into polyunsatd. fatty acids (PUFA) and PUFA-containing glycerides. The unsatd. hydroperoxy derivs. obtained subsequently were reduced to hydroxy acids or enzymically cleaved to oxo-fatty acids by the enzyme hydroperoxide lyase.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 17 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1996:704747 CAPLUS
 DOCUMENT NUMBER: 126:158999
 ORIGINAL REFERENCE NO.: 126:30735a,30738a
 TITLE: An efficient procedure for the production of fatty acid hydroperoxides from hydrolyzed flax seed oil and soybean lipoxygenase.
 AUTHOR(S): Fauconnier, M. L.; Marlier, M.
 CORPORATE SOURCE: U.E.R. Chimie Generale Organique, Fac. Univ. Scis. Agronomiques, B-5030, Belg.
 SOURCE: Biotechnology Techniques (1996), 10(11), 839-844
 CODEN: BTECE6; ISSN: 0951-208X
 PUBLISHER: Chapman and Hall
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Production of 13-linolenic acid hydroperoxide from hydrolyzed flax seed oil using lipoxygenase extracted from soybean seeds has been achieved with high transformation yields (60 g.L⁻¹.h⁻¹) with high purity (94% of 13-isomers) in a 10-L reactor without addition of any solvent or surfactant. The reaction-limiting factor is the accessibility of the substrate to the enzyme.
 OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

L21 ANSWER 18 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1992:466726 CAPLUS
 DOCUMENT NUMBER: 117:66726
 ORIGINAL REFERENCE NO.: 117:11659a,11662a
 TITLE: Agronomic performance of soybean lipoxygenase isolines
 AUTHOR(S): Pfeiffer, T. W.; Hildebrand, D. F.; TeKrony, D. M.
 CORPORATE SOURCE: Dep. Agron., Univ. Kentucky, Lexington, KY, 40546-0091, USA
 SOURCE: Crop Science (1992), 32(2), 357-62
 CODEN: CRPSAY; ISSN: 0011-183X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Lipoxygenases are enzymes that catalyze the hydroperoxidn. of polyunsatd. lipids. In soybean (Glycine max) seeds, these lipid hydroperoxides are converted to volatile compds. associated with undesirable flavors. On the other hand, lipoxygenases may be involved in plant growth and development, senescence, and pest resistance, and, while the genetic removal of soybean seed lipoxygenase might enhance soybean product quality, agronomic quality might be deleteriously affected. Mutant alleles exist for the 3 soybean seed lipoxygenase isoenzymes that genetically eliminate each lipoxygenase function. This study compared a set of 10 Lx1Lx1-lx1lx1 isolines for agronomic performance, and determined in Century isolines the effect of lipoxygenase removal on pod and stem blight (Phomopsis longicolla) fungal infection of seeds. Substituting the null allele lx1 for the competent allele Lx1 had no deleterious effects on soybean yield in 4 environments. Lodging, height, seed weight, and seed oil and protein concns. were unaffected. Maturity differed significantly, but only by 1 day. In 1988, only Century isolate L2-3, lacking lipoxygenase 2, had a higher level of P. longicolla seed infection than Century, and in 1989 only isolate L2L3-2-4, lacking lipoxygenases 2 and 3, had a significantly higher level. Production of soybean genotypes with reduced embryo lipoxygenase levels should not be more severely affected by pod and stem blight disease than genotypes containing all embryo lipoxygenases.

OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

L21 ANSWER 19 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1988:509104 CAPLUS
 DOCUMENT NUMBER: 109:109104
 ORIGINAL REFERENCE NO.: 109:18165a,18168a
 TITLE: Effects of various pretreatments of sesame seed on the oil yield and quality of sesame oil
 AUTHOR(S): Yen, Gow Chin; Shyu, Shyi Liang
 CORPORATE SOURCE: Dep. Food Sci., Natl. Chunghsing Univ., Taichung, Taiwan
 SOURCE: Zhongguo Nongye Huaxue Huizhi (1988), 26(1), 50-62
 CODEN: CKNHAA; ISSN: 0578-1736
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese

AB Various pretreatments (no dehulling, partial dehulling and dehulling) of sesame seed and grinding to different particle sizes of sesame flakes were examined with respect to their effects on oil yield and quality of sesame oil. As the particle size of the flakes grew smaller, the oil yield was smaller. The oil yield of dehulled sesame seed and the double pressed flakes, with 30 mesh ground particle size, was 45.8 and 46.1%, resp. The oil content of these 2 samples was 7.9 and 8.3% higher than that obtained from nondehulled sesame seed, resp. Although there was a slight increase in acid value, and hydroperoxide content in sesame oils from sesame flakes of smaller particle size, no significant difference was observed among the pretreatment regimens. Unroasted and com. sesame oils as well as the oils from sesame seed with various pretreatments were tested for their storage stability. The results indicated that dehulled sesame seed oil had the best storage stability, while unroasted sesame oil had the worst.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L21 ANSWER 20 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1987:479901 CAPLUS
 DOCUMENT NUMBER: 107:79901
 ORIGINAL REFERENCE NO.: 107:13129a,13132a
 TITLE: Grape seed oil epoxidation with cumene hydroperoxide. Kinetic study
 AUTHOR(S): Martinez de la Cuesta, P. J.; Rus Martinez, E.; Justicia Medina, A.
 CORPORATE SOURCE: Fac. Cienc., Univ. Malaga, Malaga, Spain
 SOURCE: Grasas y Aceites (Sevilla, Spain) (1986), 37(6), 332-6
 CODEN: GRACAN; ISSN: 0017-3495
 DOCUMENT TYPE: Journal
 LANGUAGE: Spanish

AB The epoxidn. of grape seed oils (oleic and linoleic acids) with cumene hydroperoxide and molybdenum acetylacetonate catalyst, produces plasticizers and plastic stabilizers. The reaction rate is affected by the formation of 2-phenyl-2-propanol by decomposition of the hydroperoxide under the reaction conditions used.

L21 ANSWER 21 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1984:32021 CAPLUS
 DOCUMENT NUMBER: 100:32021
 ORIGINAL REFERENCE NO.: 100:4935a,4938a

TITLE: Lipoperoxidation and aflatoxin biosynthesis by
Aspergillus parasiticus and A. flavus
AUTHOR(S): Fabbri, A. A.; Fanelli, C.; Panfili, G.; Passi, S.;
Fasella, P.
CORPORATE SOURCE: Dip. Biol. Veg., Univ. Roma "La Sapienza", Rome,
00165, Italy
SOURCE: Journal of General Microbiology (1983), 129(11),
3447-52
CODEN: JGMIAN; ISSN: 0022-1287
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The amount of aflatoxin produced by A. flavus and A. parasiticus grown on
various aged and nonaged seeds, kept at suitable conditions of temperature and
moisture, is particularly related to the peroxide nos. of the seed
oils. The addition of synthetic hydroperoxides to the
cultures greatly increased aflatoxin production
OS.CITING REF COUNT: 23 THERE ARE 23 CAPLUS RECORDS THAT CITE THIS
RECORD (23 CITINGS)

=> d 121 22-31 ibib abs

L21 ANSWER 22 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1983:177748 CAPLUS
DOCUMENT NUMBER: 98:177748
ORIGINAL REFERENCE NO.: 98:27001a,27004a
TITLE: Stability of phospholipid-enriched sunflower seed oil
against oxidative rancidity
AUTHOR(S): Pokorny, Jan; Marcin, Ales; Davidek, Jiri
CORPORATE SOURCE: Vys. Sk. Chem.-Technol., Prague, Czech.
SOURCE: Sbornik Vysoke Skoly Chemicko-Technologicke v Praze,
E: Potraviny (1982), E53, 7-24
CODEN: SVSCAZ; ISSN: 0554-9701
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The addition of natural phospholipid concs. to edible oils improves their
nutritional value and dietetic properties. Soybean phospholipids at
0.5-2.0% decreased the hydroperoxide content of sunflower oil
stored at 60°. The inhibitory effect of phospholipids was
partially due to the acid-catalyzed heterolysis caused by their acidic
groups. The enrichment of sunflower seed oil with
0.5-2.0% phospholipids improved the stability against oxidative rancidity
by extending the induction period by 20-60%.

L21 ANSWER 23 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1981:137911 CAPLUS
DOCUMENT NUMBER: 94:137911
ORIGINAL REFERENCE NO.: 94:22587a,22590a
TITLE: Determination of polyunsaturated fatty acids by an
enzymic method
AUTHOR(S): Levin, O.
CORPORATE SOURCE: Margarinbolaget AB, Stockholm, 10425/30, Swed.
SOURCE: Revue Francaise des Corps Gras (1980), 27(12), 571-3
CODEN: RFGGAE; ISSN: 0035-3000
DOCUMENT TYPE: Journal
LANGUAGE: French
AB The results of a collaborative study are described for the enzymic
determination

of *cis,cis*-1,4-pentadienoic fatty acids in vegetable oils, crude animal fats, and refined oils containing isomers of linoleic acid [60-33-3]. Starting with the method of J. MacGee (1959), a modified procedure was developed. The samples were saponified, diluted with 0.2M borate buffer, a lipoxidase [9029-60-1] solution was added to an aliquot, and the absorbance maximum was measured after 30 min. Results are given for the determination of polyunsatd. fatty acids in olive oil, poppy seed oil, and copra oil. The results were reproducible and in good agreement with those obtained by gas chromatog. The sp. absorbance of linoleic acid hydroperoxide was also determined. The method can be used to determine natural polyunsatd. fatty acids even in the presence of the linoleic acid isomers formed during refinement.

L21 ANSWER 24 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1975:461822 CAPLUS

DOCUMENT NUMBER: 83:61822

ORIGINAL REFERENCE NO.: 83:9773a,9776a

TITLE: Improvement of technology for the production of alkyd-acrylic resins

AUTHOR(S): Rudenko, B. M.; Lebedev, V. P.

CORPORATE SOURCE: USSR

SOURCE: Vestnik Khar'kovskogo Politeknicheskogo Instituta (1974), 92, 64-8

CODEN: VEPIBL; ISSN: 0453-7998

DOCUMENT TYPE: Journal

LANGUAGE: Ukrainian

AB Homogeneous modified alkyd resins (I) were obtained by polymerizing butyl methacrylate [97-88-1] in I at 130° in the presence of Co naphthenate-cumene hydroperoxide [80-15-9] and portionwise addition of the initiator. The modified method raised the conversion of the monomer to 99%, reduced duration of the reaction to 7-8 hr, decreased consumption of seed oils, and permitted formation of homogeneous coatings without oils containing conjugated double bonds.

L21 ANSWER 25 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1968:79804 CAPLUS

DOCUMENT NUMBER: 68:79804

ORIGINAL REFERENCE NO.: 68:15411a,15414a

TITLE: Influence of some components of a nonglyceride complex of natural fats on accumulation and decomposition of hydroperoxides

AUTHOR(S): Popov, As.; Yanishlieva, N.

CORPORATE SOURCE: Bulg. Akad. Wiss., Sofia, Bulg.

SOURCE: Grasas y Aceites (Sevilla, Spain) (1967), 11(7-8), 645-55

CODEN: GRACAN; ISSN: 0017-3495

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The buildup and decomposition of hydroperoxides (I) during autoxidn. of sunflower seed oil was studied. I decompose only slightly at 80°; the decomposition rate increases drastically at 100, 120, and 140°. Light, especially uv, increases the decomposition rate, but has less effect than temperature. Free fatty acids (e.g. stearic), monoglycerides, and higher fatty alcs (e.g. stearyl) shorten the induction period and lower the maximum peroxide value obtained (i.e., increase the decomposition rate). Addition of Me ricinoleate shortens the induction period, increases the maximum peroxide value, and decreases the decomposition rate.

H20

formed as a secondary oxidation product accelerates the hydroperoxide decomposition rates, which increase as H₂O accumulates.

OS,CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L21 ANSWER 26 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1967:412830 CAPLUS

DOCUMENT NUMBER: 67:12830

ORIGINAL REFERENCE NO.: 67:2483a,2486a

TITLE: Autoxidation of oils. V. Course of the oxidation of oils under normal conditions

Ivanov, St. A.

CORPORATE SOURCE: Ecole Normale Super., Plovdiv., Bulg.

SOURCE: Nauchni Trudove na Vseshiya Pedagogicheski Institut, Plovdiv, Matematika, Fizika, Khimiya, Biologiya (1966), 3(2), 123-32

CODEN: NVIPA3; ISSN: 0369-6553

DOCUMENT TYPE: Journal

LANGUAGE: Bulgarian

AB cf. CA 59: 6906d. Oxidation studies were made with com. sunflower seed oil. Accelerated oxidation was achieved with enlarged exposed surface by spreading a 10% CHCl₃ soluble of the oil on filter paper. At 3-day intervals, the paper was extracted at ambient temperature with peroxide-free Et₂O, then the ether was removed at 30° under vacuum. O uptake was determined by a previously published method [ibid. 2, 63(1964)] in the following forms: hydroperoxide (I), epoxide (II), hydroxyl (III), carbonyl (IV), carboxyl (V), and polymeric (ether bridges) (IV). The O buildup in I, II, and III is typical of a chain reaction. After 3-4 days' oxidation, the buildup is slow (induction period), then increases exponentially, reaching a maximum after 7-8 days; finally, it decreases during a 10-12-day period. These results confirm the theory of Farmer (CA 41: 2385g) on oxidation of unsatd. hydrocarbons. Buildup of O in IV and V is slow at first, after 8-10 days it reaches a maximum. Buildup in VI increases steadily from the start because it forms by decrease of I. The oxidation mechanism of III, IV, and V in fatty oils has been established for the first time. The degree of oxidation of fatty oils and the resulting oxidation products as described by Fahrion could not be determined quant. by the methods then available; however, by the new procedure, it is not possible.

L21 ANSWER 27 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1966:403441 CAPLUS

DOCUMENT NUMBER: 65:3441

ORIGINAL REFERENCE NO.: 65:574c-f

TITLE: Stability of oils for pharmaceutic use

AUTHOR(S): Galcynska, Maria; Baranowska, Bozena; Jurkowska, Ewa

CORPORATE SOURCE: Zaklad Farmacji Stosowanej Akad. Med., Lodz, Pol.

SOURCE: Annales Academiae Medicae Lodzensis (1965), 6, 98-104

CODEN: ALMLA2; ISSN: 0458-1474

DOCUMENT TYPE: Journal

LANGUAGE: Polish

AB Autoxidn. of fats and oils is a chain reaction catalyzed by traces of metals or enzymes from bacteria or fungi (induction period). The hydroperoxides obtained (peroxide number) are subject to a further decomposition (activation period). Preservatives are effective only when added during the induction period. Neither the use of oils containing natural antioxidants (tocopherols) nor the addition of 4,4'-(2,3-dimethyltetramethylene)dipyrrocatechol (N.D.G.A.) or

tertbutyl-4-methoxyphenol (BHA) increases the stability. Synthetic Et oleate (I) was used as a standard to which antioxidants and synergistic agents were added. It was compared to rape-seed oil natural (II). The peroxide number of the oils was determined (1) after a few days at 65°, (2) after 24 hrs. at 105°, and (3) after 4-12 hrs. in boiling H2O with air passing at 450 ml./min. The best antioxidant for I was 0.02% BHA; only 1.2% decomposition was observed as compared to 100% for oil without anti-oxidant. For II, 0.05% N.D.G.A. resulted in 63% decomposition. Synergistic agents did not enhance the stability of I, but 0.1% phosphoric acid was extremely effective, reducing the decomposition to 1.6%. Tocopherols were practically ineffective in I. II, containing .apprx.0.1% tocopherols (mostly β -, γ -, δ -, and α -tocopherol) had no effect. In pharmaceutical practice only oils with peroxide number ≤ 5 should be used. Addition of H3PO4 as a synergistic agent is recommended.

L21 ANSWER 28 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1965:461977 CAPLUS
DOCUMENT NUMBER: 63:61977
ORIGINAL REFERENCE NO.: 63:11259f-h
TITLE: Autoxidation of linoleic acid
AUTHOR(S): Pal Mehta, Shashi; Ecanow, Bernard
CORPORATE SOURCE: Univ. of Illinois, Chicago
SOURCE: Journal of Pharmacy and Pharmacology (1965), 17(8), 525-6
CODEN: JPPMAB; ISSN: 0022-3573
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mehta previously reported a possible mechanism for the autoxidn. of linoleic-rich oils in emulsion (Thesis, Banaras Hindu University, India, 1962). The emulsions investigated contained poppy seed oil, safflower oil, and Me linoleate, and were prepared with acacia and tragacanth as emulsifying agents. In the early stages of autoxidn., O appeared to add to the double bond to form cyclic peroxides, which were then converted to conjugated dienoic hydroperoxides. The amount of conjugated trienes was insignificant in the oils and ester from which the emulsions were prepared and in all the systems after preparation. The trienes

did not develop to any significant extent even after 42 days of autoxidn. The samples were stored at $25 \pm 2^\circ$ in ground glass stoppered bottles. Pure linoleic acid (I) was now examined. The surfactant Brij 35 (5 g.) was used to prepare a solubilized and an emulsion system containing 1.0%

and 1.33 g. I, resp., with H2O to 25 ml. Samples were stored as before. In both systems, the amount of conjugated dienes reached a maximum after 10 days and then the dienes were further oxidized. El μ cm. at 268 m μ for the unisomerized sample (corresponding to the conjugated trienes) was 6.16 for I. After 20 days of autoxidn., El μ cm. at 268 m μ was 17.15 and 14.92 for the emulsion and solubilized system, resp. The formation of significant amts. of trienes was thus indicated. The 30-day values indicated that the trienes were further oxidized.

L21 ANSWER 29 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1965:416366 CAPLUS
DOCUMENT NUMBER: 63:16366
ORIGINAL REFERENCE NO.: 63:2858f-g
TITLE: Hydroperoxides of fatty organic compounds

INVENTOR(S): Baranger, Pierre
 SOURCE: 13 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| BE 641081 | | 19640401 | BE | 19631210 |
| PRIORITY APPLN. INFO.: | | | FR | 19621211 |

AB Ethylenically unsatd. fatty compds. are treated with air in 2 stages to give compds. of the general formula $RCH_2CH(OOH)CH:CHCH_2R_1$, where R and R₁ are organic groups; emulsions of the prepared compds. can be used in the treatment of dermatosis, burns, tuberculosis, and silicosis. Thus, air is bubbled into sesame oil for 7 days at 70° and then for 5 days at 40° to give sesame oil hydroperoxide, peroxidation number 55. Similarly prepared are (peroxidation number given): olive oil hydroperoxide, 55; sunflower seed oil hydroperoxide, 75; peanut oil hydroperoxide, 55.

L21 ANSWER 30 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1965:59966 CAPLUS
 DOCUMENT NUMBER: 62:59966
 ORIGINAL REFERENCE NO.: 62:10679e-f
 TITLE: The analysis of carbonyl compounds and hydroperoxides in the autoxidation of olefinic fats. I. The determination of carbonyl compounds in the presence of hydroperoxides by their reduction with potassium iodide
 AUTHOR(S): Linow, F.; Roloff, M.; Taeufel, K.
 CORPORATE SOURCE: Deut. Akad. Wiss., Potsdam, Germany
 SOURCE: Fette, Seifen, Anstrichmittel (1964), 66(12), 1052-5
 CODEN: FSASAX; ISSN: 0015-038X
 DOCUMENT TYPE: Journal
 LANGUAGE: German

AB Expts. on model aldehydes and on Me esters of autoxidized sunflower seed oil show that carbonyl compds. (RCHO) and hydroperoxides (ROOH) can be determined in their mixts. by reducing the ROOH with KI. RCHO are extracted with C₆H₆, and their 2,4-dinitrophenylhydrazones are determined absorptiometrically at 430, 460, and 480 mμ in the presence of CCl₃COOH as alkanal, alkenal, and alkadienal, resp., with a mean error of ±6%.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L21 ANSWER 31 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1964:448757 CAPLUS
 DOCUMENT NUMBER: 61:48757
 ORIGINAL REFERENCE NO.: 61:8517f-h
 TITLE: Applications of infrared spectroscopy for the examination of the drying and yellow discoloration of oil films
 AUTHOR(S): O'Neill, L. A.
 CORPORATE SOURCE: Paint Res. Sta., Teddington, UK
 SOURCE: Paint Technology (1963), 27(1), 44-7
 From: CZ 1964 (1), Abstr. No. 2521.

CODEN: PATEA2; ISSN: 0030-9524
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 AB The self-oxidation of linseed oil on drying is followed by infrared spectrography. The hydroperoxide groups (2.92 μ) are gradually replaced by hydroxyl groups (2.88 μ); carboxyl and carbonyl groups (5.82 μ) are formed; the trans-unsatn. increases (10.33 μ), the cis-unsatn. (13.86 μ) decreases. The yellowing of linseed and tobacco seed oil is examined by infrared spectrography by comparison with a lake film dried in a clean atmospheric, with a lake film subsequently discolored in an NH₃ atmospheric, and with a lake film rebleached in sunlight. All drying, yellowing oil films absorb under natural conditions 0.4% N and in NH₃ >2% N; presumably, pyrrole rings are being formed. On oxidation in pure air, practically no yellowing occurs, and on storage in closed containers, a very delayed yellowing.
 OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

=> d 121 32-41 ibib abs

L21 ANSWER 32 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1963:421906 CAPLUS
 DOCUMENT NUMBER: 59:21906
 ORIGINAL REFERENCE NO.: 59:3970a-c
 TITLE: Peroxy esters of p-menthane hydroperoxides
 INVENTOR(S): Mageli, Orville L.; Harrison, James B.
 PATENT ASSIGNEE(S): Wallace & Tiernan Inc.
 SOURCE: 3 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| US 3082236 | | 19630319 | US 1959-809619 | 19590429 |
| PRIORITY APPLN. INFO.: | | | US | 19590429 |

AB The title compds. (I) are useful as initiators in free radical polymerizations, as bleaching agents for flour, seeds, oils, and textiles, as vulcanizing agents for natural and synthetic rubbers and as diesel fuel additives. I are prepared by the reaction of p-menthane hydroperoxide (II) with the appropriate acid halide, anhydride, or halocarbonate in the presence of a base. Thus, to 13 g. 66% II dissolved in 30 ml. anhydrous Et₂O and 7.9 g. pyridine was added, in portions, 7.6 g. Et chloroformate. The temperature was kept at 5-10°. When addition was complete, the mixture was allowed to warm to room temperature, then stirred 1 hr. Anhydrous Et₂O (100 ml.) was added and the mixture filtered, washed with saturated tartaric acid, H₂O, 10% NaHCO₃ solution, H₂O, and dried (anhydrous MgSO₄) to yield 15 g. p-menthyl O-Et percarbonate as an oil, n_{30D} 1.4406, d_{30D} 0.9442. Also prepared were p-menthyl peroxyacetate, b_{0.02} 50-1°, n_{25D} 1.4564, d₂₅₄ 0.962, p-menthyl peroxybenzoate (III), n_{30D} 1.5028, d₃₀₄ 1.0176, p-menthyl peroxyaurate, n_{30D} 1.4498, d₃₀₄ 0.8936, p-menthyl peroxyisobutyrate, n_{30D} 1.4391, d₃₀₄ 0.9247, p-menthyl O-iso-Bu carbonate, n_{30D} 1.4428, d₃₀₄ 0.9311,

di-p-menthyl perphthalate, n25D 1.5074, d254 1.055, and di-p-menthyl persuccinate, m. 102-3°.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L21 ANSWER 33 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1963:83168 CAPLUS

DOCUMENT NUMBER: 58:83168

ORIGINAL REFERENCE NO.: 58:14329e-g

TITLE: Carbonyl formation during the autoxidation of fatty esters

AUTHOR(S): Taeufel, K.; Heder, G.

CORPORATE SOURCE: Humboldt Univ., Berlin

SOURCE: Fette, Seifen, Anstrichmittel (1963), 65, 85-91

CODEN: FSASAX; ISSN: 0015-038X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. *ibid.* 6. The action of acids and bleaching earths on autoxidized Me oleate (I) and Et linoleate (II) gives increased yield of steam-volatile monocarbonyl compds., which were studied qual. and quant. as 2,4-dinitrophenylhydrazones by paper chromatography according to Gaddis and Ellis (CA 53, 19856c) to sep. the aldehydes into alkanals, 2-alkenals, and 2,4-alkadienals. When autoxidized I was heated for 30 min. at 85° with addns. of HCl, bleaching earth, Cu⁺, Cu⁺⁺, or Fe⁺⁺⁺, only alkanals and 2-alkenals could be detected. 2,4-Alkadienals were formed when the I was heated to 180°. With II, 2,4-alkadienals could be detected in the heated ester when no additives were present. In the presence of the above additives, no dienals were formed. A relation exists between the hydroperoxide I decomposition and the formation of carbonyl compds. Cu⁺, Cu⁺⁺, and Fe⁺⁺⁺ only cause a slight increase in the carbonyl formation and probably undergo secondary reactions with the carbonyl compds. The presence of HCl and bleaching earth causes an increased polymerization of unsatd. aldehydes. The aldehydes which could be identified must originate from the decomposition of I. Sunflower seed oil at different stages of autoxidn. (peroxide values 75 and 285) was also treated with 1% HCl, 20% bleaching earth, and 2.1% Cu⁺⁺. In every case, saturated mono- and diunsatd. aldehydes were detected. Treatment with Cu⁺⁺ or bleaching earth led to a reduction in the dienals and an increase in the alkanals formed.

L21 ANSWER 34 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1962:469660 CAPLUS

DOCUMENT NUMBER: 57:69660

ORIGINAL REFERENCE NO.: 57:13904e-g

TITLE: Spectral analysis of vegetable oils

AUTHOR(S): Mironova, H. N.

SOURCE: Tr. Vses. Nauchn.-Issled. Inst. Zhiron (1960), (20), 90-103

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A physicochem. interpretation is given of the oil oxidation and of some undesirable changes connected with it. Sunflower seed and linseed oil in CCl₄ and hexane were oxidized at 100-10° and measurements were made in the ultraviolet, infrared, and visual region. The main problem was the identification of the initial products of oxidn. peroxides and hydroperoxides. After bleaching of the oxidized oils with activated charcoal and bleaching earth, new absorption maximum were found in

the ultraviolet spectrum. These maximum at 250-300 mμ are due to the presence in the bleached oils of one more conjugated double bond than in the initial oil. One of the causes for these double bonds is probably the dehydration of unsatd. hydroperoxides. The formation of the unsatd. hydroperoxides is accompanied not only by conjugated double bonds, but also by cis-trans isomers. The absorption spectrum of sunflower seed oil at 900-1000 cm.⁻¹ indicates the presence of cis-trans isomers. At low temps., cis-trans isomers are formed and at higher temps. trans-trans isomers.

L21 ANSWER 35 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1962:429996 CAPLUS

DOCUMENT NUMBER: 57:29996

ORIGINAL REFERENCE NO.: 57:6045c-e

TITLE: Analyses of lipids and oxidation products by partition chromatography. Hydroxy fatty acids and esters
 AUTHOR(S): Frankel, E. N.; McConnell, D. G.; Evans, C. D.
 CORPORATE SOURCE: Northern Regional Res. Lab., Peoria, IL
 SOURCE: Journal of the American Oil Chemists' Society (1962), 39, 297-301

CODEN: JAOCA7; ISSN: 0003-021X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. CA 55, 12890d. The method used previously for determination of dimeric and polymeric acids is used with slight modification for determination of hydroxy fatty acids. The procedure was used to separate hydroxy fatty acids in Dimorphotheca and Strophanthus seed oils. The Me ester of dimorphecic acid, the principal hydroxy fatty ester of Dimorphotheca oil, behaved like reduced Me linoleate hydroperoxide and had a polarity intermediate between methyl 12-hydroxystearate and Me 9,10-dihydroxystearate. The 9-hydroxy-12-octadecenoic ester of Strophanthus oil had a larger retention volume than Me ricinoleate and could be separated from it. The purity of reduced Me linoleate hydroperoxides and Me dimorphecolate, isolated chromatographically, was comparable to that reported in the literature.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L21 ANSWER 36 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1956:54646 CAPLUS

DOCUMENT NUMBER: 50:54646

ORIGINAL REFERENCE NO.: 50:10429a-d

TITLE: The chemistry of polymerized oils. V. The autoxidation of methyl linoleate

AUTHOR(S): Sephton, H. H.; Sutton, Donald A.
 CORPORATE SOURCE: S. African Council Sci. Ind. Research, Pretoria
 SOURCE: Journal of the American Oil Chemists' Society (1956), 33, 263-72

CODEN: JAOCA7; ISSN: 0003-021X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Me linoleate, prepared from sunflower-seed oil, was autoxidized at various temps., the hydroperoxide (I) concentrated by the Dutton procedure, fractionated in a 30-tube Craig countercurrent solvent (80% aqueous MeOH against 1:1 pentane:isohexane) apparatus and by reverse

phase partition chromatograph, the purified I was reduced to Me

hydroxylinoleate, this was fractionated also by countercurrent distribution and (or) reverse phase partition chromatography, and fractions were studied by urea adduct fractionation, hydrogenation, isomerization, mol. distillation, and H₂SO₄ dehydration, and the compds. isolated and formed examined by infrared spectrometry. The autoxidation of Me linoleate at ordinary temps. produced cis-trans and trans-trans isomers; and there was a possibility that conjugated cis-cis forms were also produced. A partial separation of the geometrical forms was accomplished by the reverse phase partition chromatograph both on I and the corresponding hydroxy compds.; isolation of the trans-trans forms was by urea complex fractionation. No positional isomers except the known 9- and 13-isomers were positively identified; there was a possibility that very minor amts. of the 2-isomers were formed; the 9- and 13-isomer were present in about equal amts., and the 11-isomer was not detected by the method applied. 31 references.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L21 ANSWER 37 OF 56 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1953:6215 CAPLUS

DOCUMENT NUMBER: 47:6215

ORIGINAL REFERENCE NO.: 47:1058a-c

TITLE: Oxidation of monoethenoid fatty acids and esters. The union of gaseous oxygen with erucic acid and methyl and propyl erucate

AUTHOR(S): Skellon, J. H.; Taylor, P. E.

CORPORATE SOURCE: Acton Tech. Coll., UK

SOURCE: Journal of the Chemical Society (1952) 1813-16

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Rape seed oil (800 g.) in 1 l. EtOH and 200 g. KOH in 100 ml. H₂O, heated 5 hrs. on the water bath, give 725 g. fatty acids; treated in boiling EtOH with 50 g. Pb(OAc)₂ in 200 ml. boiling EtOH containing 1.5% AcOH and the mother liquor similarly treated, the acids were separated into 7 fractions; fraction 4 (105 g., m. 33°): further crystallization of the Pb salts gives 90 g. erucic acid (I), m. 33°, n_D15.14512. In a 2nd method I was isolated as the Li salt and further purified through the Pb salt. Me ester (II), n_D15.5 1.4575, n_D15.1449; Pr ester (III), n_D15.5 1.4556, n_D15.14429. Details are given of the catalytic oxidation of I-III at 55°, 85°, and 120° with 0.05% U (as the erucate) as catalyst. The oxidations at high temps. result in rapid hydroperoxide decomposition followed by some dimerization and there is evidence that, at moderate temps., the mechanism may follow a different course, as in the case of other monoethenoid fatty acids. The composition of the oxidation products varies considerably with conditions of oxidation and, in oxidations of the esters, the presence of the terminal alkyl group apparently has considerable influence, not only on the rate of entry of the O, but also on that of decomposition of the hydroperoxides.

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ACCESSION NUMBER: 2009:84009 AGRICOLA

DOCUMENT NUMBER: CAIN709036134

TITLE: Stability of crude sunflower oils to autoxidation and

to seed aging.
 AUTHOR(S): Mikolajczak, K.L.; Smith, C.R.; Wolff, I.A.
 AVAILABILITY: DNAL (307.8 J82)
 SOURCE: J Amer Oil Chem Soc, p. 24-25
 DOCUMENT TYPE: Article
 FILE SEGMENT: Other US
 LANGUAGE: English

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ACCESSION NUMBER: 2008:142478 AGRICOLA
 DOCUMENT NUMBER: IND44121359
 TITLE: Investigation of the Parameters Affecting the Cetane
 Number of Biodiesel.
 AUTHOR(S): Wadumesthrige, Kapila; Smith, Jeremiah C.; Wilson,
 John R.; Salley, Steven O.; Ng, K. Y. Simon
 AVAILABILITY: DNAL (307.8 J82)
 SOURCE: Journal of the American Oil Chemists' Society, 2008
 Nov. Vol. 85, no. 11 p. 1073-1081
 Publisher: Berlin/Heidelberg : Springer-Verlag
 ISSN: 0003-021X
 NOTE: Includes references
 DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
 FILE SEGMENT: Other US
 LANGUAGE: English

AB The cetane number is the most significant property for measuring the
 ignition quality of fuels for compression ignition diesel engines. In this
 study, the derived cetane number (DCN) of several types of biodiesel,
 biodiesel components and ultra-low sulfur diesel (ULSD) was determined
 using an Ignition Quality Tester (IQT[trade mark sign]). The chemical
 structure of FAME leads to a higher cetane number of biodiesel compared to
 ULSD. The contribution to DCN from minor components present in biodiesel
 is not significant. Oxidation of biodiesel samples results in higher DCN
 values while depending on the conditions of oxidation. A greater than 25%
 increase was observed when oxidation was carried out in a way to retain
 volatile oxidative products such as carboxylic acids and aldehydes.
 Accelerated oxidation of cotton seed oil (CSO)
 biodiesel at 110 °C and 10 L/min air flow rate after 210 min resulted in a
 loss of 14% of the FAME content, of which 10% can be attributed to the
 oxidation of methyl linoleate (C18:2), whereas oxidation of soy bean oil
 (SBO) biodiesel resulted in a loss of 21% total FAME after 210 min. A
 significant amount of methyl linolenate (C18:3) remained un-reacted after
 210 min of oxidation. Ambient oxidation of distilled biodiesel samples
 resulted in a very high cetane number. Oxidative products such as
 aldehydes, hydroperoxides and oligomers of FAME are probably
 responsible for this higher DCN. This study enhances the understanding of
 the effect of composition on the cetane number of biodiesel as well as the
 effect of oxidative aging on both biodiesel composition and the resultant
 DCN.

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ACCESSION NUMBER: 97:23931 AGRICOLA

DOCUMENT NUMBER: IND20555115
 TITLE: An efficient procedure for the production of fatty acid hydroperoxides from hydrolyzed flax seed oil and soybean lipooxygenase.
 AUTHOR(S): Fauconnier, M.L.; Marlier, M.
 CORPORATE SOURCE: Faculte Universitaire des Sciences Agronomiques, Gembloux, Belgium.
 SOURCE: Biotechnology techniques, Nov 1996. Vol. 10, No. 11. p. 839-844
 Publisher: London, UK : Chapman & Hall.
 CODEN: BTECE6; ISSN: 0951-208X
 NOTE: Includes references
 PUB. COUNTRY: England; United Kingdom
 DOCUMENT TYPE: Article
 FILE SEGMENT: Non-U.S. Imprint other than FAO
 LANGUAGE: English

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ACCESSION NUMBER: 92:94631 AGRICOLA
 DOCUMENT NUMBER: IND92056916
 TITLE: Agronomic performance of soybean lipooxygenase isolines.
 AUTHOR(S): Pfeiffer, T.W.; Hildebrand, D.F.; TeKrony, D.M.
 CORPORATE SOURCE: University of Kentucky, Lexington, KY
 AVAILABILITY: DNAL (64.8 C883)
 SOURCE: Crop science, Mar/Apr 1992. Vol. 32, No. 2. p. 357-362
 Publisher: Madison, Wis. : Crop Science Society of America.
 CODEN: CRPSAY; ISSN: 0011-183X
 NOTE: Includes references.
 DOCUMENT TYPE: Article
 FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
 LANGUAGE: English

AB Lipooxygenases (EC 1.13.11.12) are enzymes that catalyze the hydroperoxidation of polyunsaturated lipids. In soybean [Glycine max (L.) Merr.] seeds, these lipid hydroperoxides are converted to volatile compounds associated with undesirable flavors. On the other hand, lipooxygenases may be involved in plant growth and development, senescence, and pest resistance, and, while the genetic removal of soybean seed lipooxygenases might enhance soybean product quality, agronomic quality might be deleteriously affected. Mutant alleles exist for the three soybean seed lipooxygenase isozymes that genetically eliminate each lipooxygenase function. This study compared a set of 10 Lx1Lx1-lx1lx1 isolines for agronomic performance, and determined in 'Century' isolines the effect of lipooxygenase removal on pod and stem blight (Phomopsis longicolla Hobbs) fungal infection of seeds. Substituting the null allele lx1 for the competent allele Lx1 had no deleterious effects on soybean yield in four environments. Lodging, height, seed weight, and seed oil and protein concentrations were unaffected. Maturity differed significantly, but only by 1 d. In 1988, only Century isolate L2-3, lacking lipooxygenase 2, had a higher level of P. longicolla seed infection than Century, and in 1989 only isolate L2L3-2-4, lacking lipooxygenases 2 and 3, had a significantly higher level. Production of soybean genotypes with reduced embryo lipooxygenase levels should not be more severely

affected by pod and stem blight disease than genotypes containing all embryo lipxygenases.

=> d 121 42 - 56 ibib abs

'-' IS NOT A VALID FORMAT

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'S' IS NOT A VALID FORMAT

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'D' IS NOT A VALID FORMAT

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ACCESSION NUMBER: 81:126565 AGRICOLA

DOCUMENT NUMBER: IND81106248

TITLE: Effect of phospholipids on the decomposition of lipid hydroperoxides Refined sunflower seed oil.

AUTHOR(S): Pokorny, J.; Poskocilova, H.; Davidek, J.

AVAILABILITY: DNAL (389.8 N142)

SOURCE: Die Nahrung. = Food., 1981 Vol. 25, No. 6. p. K29-K31

ill

Publisher: Berlin, Akademie-Verlag.

ISSN: 0027-769X

10 ref.

NOTE: DOCUMENT TYPE: Article

FILE SEGMENT: Non-U.S. Imprint other than FAO

LANGUAGE: English

L21 ANSWER 56 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1962:53029 BIOSIS

DOCUMENT NUMBER: PREV19623900003297; BA39:3297

TITLE: Observations on peroxide toxicity in seed germination.

AUTHOR(S): SIEGEL, S. M.

CORPORATE SOURCE: Union Carbide Res. Inst., Tarrytown, N. Y.

SOURCE: PHYSIOL PLANTARUM, (1962) Vol. 15, No. 1, pp. 21-26.
 DOCUMENT TYPE: Article
 FILE SEGMENT: BA
 LANGUAGE: Unavailable
 ENTRY DATE: Entered STN: May 2007
 Last Updated on STN: May 2007

AB The germination of turnip seed was far more inhibited by various organic hydroperoxides than by H2O2- The most active inhibitor was found to be p-menthane hydroperoxide. The germination of lettuce seed was enhanced by sodium linoleate, but in the presence of lipoxidase, the linoleate effect changed to inhibition. When turnip and lettuce germination were compared, the greater sensitivity of the latter to p-menthane hydroperoxide was obvious. The existence of a more general differential sensitivity toward oxidizing conditions and the possible importance therein of seed oil content were noted. Indole, IAA, and CoCl₂, which are known to protect plants against other oxidizing conditions, also offered partial protection against the germination-inhibiting effects of p-menthane hydroperoxide.
 ABSTRACT AUTHORS: Author

=> d 121 43-55 ibib abs

L21 ANSWER 43 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2008:697663 BIOSIS
 DOCUMENT NUMBER: PREV200800697662
 TITLE: Investigation of the Parameters Affecting the Cetane Number of Biodiesel.
 AUTHOR(S): Wadumesthrige, Kapila; Smith, Jeremiah C.; Wilson, John R.; Salley, Steven O.; Ng, K. Y. Simon [Reprint Author]
 CORPORATE SOURCE: Wayne State Univ, Dept Chem Engrn and Mat Sci, 5050 Anthony Wayne Dr, Detroit, MI 48202 USA
 SOURCE: Journal of the American Oil Chemists' Society, (NOV 2008) Vol. 85, No. 11, pp. 1073-1081.
 CODEN: JAOCA7. ISSN: 0003-021X. E-ISSN: 1558-9331.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 3 Dec 2008
 Last Updated on STN: 3 Dec 2008

AB The cetane number is the most significant property for measuring the ignition quality of fuels for compression ignition diesel engines. In this study, the derived cetane number (DCN) of several types of biodiesels, biodiesel components and ultra-low sulfur diesel (ULSD) was determined using an Ignition Quality Tester (IQT (TM)). The chemical structure of FAME leads to a higher cetane number of biodiesel compared to ULSD. The contribution to DCN from minor components present in biodiesel is not significant. Oxidation of biodiesel samples results in higher DCN values while depending on the conditions of oxidation. A greater than 25% increase was observed when oxidation was carried out in a way to retain volatile oxidative products such as carboxylic acids and aldehydes. Accelerated oxidation of cotton seed oil (CSO) biodiesel at 110 degrees C and 10 L/min air flow rate after 210 min resulted in a loss of 14% of the FAME content, of which 10% can be attributed to the oxidation of methyl linoleate (C18:2), whereas oxidation of soy bean oil (SBO) biodiesel resulted in a loss of 21% total FAME after 210 min. A significant amount of methyl linolenate (C18:3) remained

un-reacted after 210 min of oxidation. Ambient oxidation of distilled biodiesel samples resulted in a very high cetane number. Oxidative products such as aldehydes, hydroperoxides and oligomers of FAME are probably responsible for this higher DCN. This study enhances the understanding of the effect of composition on the cetane number of biodiesel as well as the effect of oxidative aging on both biodiesel composition and the resultant DCN.

L21 ANSWER 44 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 2005:339115 BIOSIS
DOCUMENT NUMBER: PREV200510127454
TITLE: Triacylglycerol hydroperoxides not detected in pig small intestinal epithelial cells after a diet rich in oxidized triacylglycerols.
AUTHOR(S): Suomela, Jukka-Pekka [Reprint Author]; Ahotupa, Markku; Kallio, Heikki
CORPORATE SOURCE: Turku Univ, Dept Biochem and Food Chem, FI-20014 Turku, Finland
SOURCE: jusuom@utu.fi
Lipids, (APR 2005) Vol. 40, No. 4, pp. 349-353.
CODEN: LPDSAP. ISSN: 0024-4201.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 31 Aug 2005
Last Updated on STN: 31 Aug 2005

AB The presence of TAG hydroperoxides in the epithelial cells of the small intestines in growing pigs was studied after they had consumed a diet rich in either nonoxidized or oxidized sunflower seed oil (PV in oils, 1 and 190 mequiv O-2/kg, respectively). To obtain molecular-level information on the oxidized TAG structures, a new approach based on TLC and HPLC-electrospray ionization-MS was used in the analysis of the samples. TAG hydroperoxides were not detected in the small intestinal mucosa or adipose tissue of either group, whereas TAG hydroxides, ketones, and epoxides were detected in all samples. The results suggest that dietary TAG hydroperoxides do not lead to the appearance of these molecules in the tissues.

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ACCESSION NUMBER: 2005:165312 BIOSIS
DOCUMENT NUMBER: PREV200500164615
TITLE: Enzyme-catalyzed modification of oilseed materials to produce eco-friendly products.
AUTHOR(S): Hayes, Douglas G. [Reprint Author]
CORPORATE SOURCE: Dept Biosyst Engrn and Environm Sci, Univ Tennessee, 2506 EJ Chapman Dr, Knoxville, TN, 37996, USA
dhayes1@utk.edu
SOURCE: Journal of the American Oil Chemists' Society, (December 2004) Vol. 81, No. 12, pp. 1077-1103. print.
CODEN: JAOCA7. ISSN: 0003-021X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: General Review; (Literature Review)
Entered STN: 27 Apr 2005
Last Updated on STN: 27 Apr 2005

AB Novel products produced from seed oil materials (TAG,

phospholipids, and minor components such as tocopherols, sterols, stanols, and fatty acyl esters of the latter two) by enzyme-mediated purification or chemical modification are reviewed. The primary focus is on "value-added products" of current and potential use (particularly in the food, cosmetics, and pharmaceutical industries) that require the selectivity of enzymes and mild operating conditions, the latter being beneficial for polyunsaturated and oxygenated acyl groups. The paper briefly reviews the biochemistry of enzymes in lipid modification (lipases, phospholipases, and lipoxygenases) and discusses and assesses the current and future applications, current state of the art, and areas for future research for the following enzyme-mediated processes: isolation of polyunsaturated and oxygenated FFA; formation of structured TAG as nutraceuticals; formation of MAG, saccharide-FA esters, and other polyhydric alcohol ester as emulsifiers and surfactants; isolation and/or modification of tocopherols and sterols as antioxidants; formation of hydroperoxides as chemical intermediates; and modification of phospholipids for use in liposomes.

L21 ANSWER 46 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2002:468775 BIOSIS
 DOCUMENT NUMBER: PREV200200468775
 TITLE: Dietary lipid peroxidation products and DNA damage in colon carcinogenesis.
 AUTHOR(S): Kanazawa, Ayako; Sawa, Tomohiro; Akaike, Takaaki; Maeda, Hiroshi [Reprint author]
 CORPORATE SOURCE: Department of Microbiology, Kumamoto University School of Medicine, Honjo 2-2-1, Kumamoto, 860-0811, Japan
 msmaedah@gpo.kumamoto-u.ac.jp
 SOURCE: European Journal of Lipid Science and Technology, (July, 2002) Vol. 104, No. 7, pp. 439-447. print.
 ISSN: 1438-7697.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 4 Sep 2002
 Last Updated on STN: 4 Sep 2002

L21 ANSWER 47 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2002:162193 BIOSIS
 DOCUMENT NUMBER: PREV200200162193
 TITLE: Sedanolide, a natural phthalide from celery seed oil: Effect on hydrogen peroxide and tert-butyl hydroperoxide-induced toxicity in HepG2 and CaCo-2 human cell lines.
 AUTHOR(S): Woods, J. A.; Jewell, C.; O'Brien, N. M. [Reprint author]
 CORPORATE SOURCE: Nutritional Sciences, Department of Food Science, Food Technology and Nutrition, University College, Cork, Ireland
 nob@ucc.ie
 SOURCE: In Vitro and Molecular Toxicology, (Fall, 2001) Vol. 14, No. 3, pp. 233-240. print.
 ISSN: 1097-9336.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 21 Feb 2002
 Last Updated on STN: 26 Feb 2002

AB Sedanolide is a natural compound occurring in edible umbelliferous plants.

Celery seed oil, a significant source of sedanolide, is used as an herbal remedy to treat inflammatory-associated conditions such as gout and rheumatism. The objective of this study was to assess the potential protective properties of sedanolide against hydrogen peroxide (H₂O₂)- and tert-butyl hydroperoxide (tBOOH)-induced toxicity in HepG2 and CaCo-2 cells. Viability of HepG2 and CaCo-2 cells was unaffected by a 24-h exposure to sedanolide (7-500 µM), however, when the cells were cultured in sedanolide-free medium for a further two cell cycles (72 h), a decrease in cell viability was observed for HepG2 cells previously exposed to 500 µM of the compound. Cells pretreated with sedanolide (100 µM for 24 h) and exposed to either H₂O₂ or tBOOH did not exhibit statistically significant difference in viability from controls. A significant increase (P<0.05) in DNA strand breaks, as measured by the comet assay, was observed in HepG2 but not CaCo-2 cells following a 24-h incubation with 500 µM sedanolide. Sedanolide did not modulate H₂O₂- and tBOOH-induced DNA damage. Sedanolide is relatively nontoxic to cells in culture, however, the protection it afforded against H₂O₂- and tBOOH-induced toxicity was not statistically significant.

L21 ANSWER 48 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 1999:490536 BIOSIS
 DOCUMENT NUMBER: PREV199900490536
 TITLE: Analytical evaluation of polyunsaturated fatty acids degradation during thermal oxidation of edible oils by Fourier transform infrared spectroscopy.
 AUTHOR(S): Moreno, M.C.M. Moya [Reprint author]; Olivares, D. Mendoza; Lopez, F.J. Amezquita; Adelantado, J.V. Gimeno; Reig, F. Bosch
 CORPORATE SOURCE: Department of Analytical Chemistry, Faculty of Chemistry, University of Valencia, C/Dr. Moliner 50, 46100, Burjassot, Valencia, Spain
 SOURCE: Talanta, (Sept. 13, 1999) Vol. 50, No. 2, pp. 269-275. print.
 CODEN: TLNTA2. ISSN: 0039-9140.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 16 Nov 1999
 Last Updated on STN: 16 Nov 1999
 AB The oxidative deterioration of polyunsaturated fatty acids (PUFAs) in culinary oils and fats during episodes of heating associated with normal usage (80-300degreeC, 20-40 min) has been monitored by Fourier transform infrared spectroscopy (FTIR). The thermal oxidation of PUFAs is a free radical chain reaction, in which hydroperoxides are generally recognized as the primary major products. Hydroperoxides of PUFAs are easily decomposed into a very complex mixture of secondary products with the decrease in unsaturation. The oxidative advance of PUFAs during heating was studied by the determination of unsaturation percentage at different temperatures and heating times. Oils frequently used in food frying such as olive oil, sunflower oil, corn oil and seeds oil (sunflower, safflower and canola seed) were studied. The results show there is a decrease in unsaturation starting at 150degreeC and becoming more pronounced at temperatures around 250degreeC. The following variations were found in the unsaturation percentage, expressed as methyl linoleate, between the original sample and the sample heated at 300degreeC for 40 min: olive oil (19-6%), sunflower oil (29-12%), corn oil (28-18%) and seeds oil (23-11%).

This variation in unsaturation grade provides evidence of the transformation of essential PUFAs and subsequent decrease in the oils' nutritional value. The internal standard method is suitably precise when the n-valeronitrile is used as standard as shown by the 1-2% relative standard deviation (R.S.D.) found for seven replicates.

L21 ANSWER 49 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1996:574521 BIOSIS

DOCUMENT NUMBER: PREV199799289202

TITLE: An efficient procedure for the production of fatty acid hydroperoxides from hydrolyzed flax seed oil and soybean lipoxygenase.

AUTHOR(S): Fauconnier, M.-L. [Reprint author]; Marlier, M.

CORPORATE SOURCE: U.E.R. Chimie Generale Organique, Fac. Univ. Sci. Agron., 2 Passage des deportes, B-5030 Gembloux, Belgium

SOURCE: Biotechnology Techniques, (1996) Vol. 10, No. 11, pp. 839-844.

CODEN: BTECE6. ISSN: 0951-208X.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 23 Dec 1996

Last Updated on STN: 23 Dec 1996

AB Production of 13-linolenic acid hydroperoxides from hydrolyzed flax seed oil using lipoxygenase extracted from soybean seeds has been achieved with high transformation yields (60 g.l.-1.h-1) with a high purity (94% of 13-isomers) in a 10 liter reactor without addition of any solvent or surfactant. The reaction limiting factor is, probably, the accessibility of the substrate to the enzyme.

L21 ANSWER 50 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1992:275536 BIOSIS

DOCUMENT NUMBER: PREV199294000186; BA94:186

TITLE: AGRONOMIC PERFORMANCE OF SOYBEAN LIPOXYGENASE ISOLINES.

AUTHOR(S): PFEIFER T W [Reprint author]; HILDEBRAND D F; TEKRONY D M

CORPORATE SOURCE: DEP AGRON, UNIV KY, LEXINGTON, KY 40546-0091, USA

SOURCE: Crop Science, (1992) Vol. 32, No. 2, pp. 357-362.

CODEN: CRPSAY. ISSN: 0011-183X.

DOCUMENT TYPE: Article

FILE SEGMENT: BA

LANGUAGE: ENGLISH

ENTRY DATE: Entered STN: 10 Jun 1992

Last Updated on STN: 9 Aug 1992

AB Lipoxygenases (EC 1.13.11.12) are enzymes that catalyze the hydroperoxidation of polyunsaturated lipids. In soybean [Glycine max (L.) Merr.] seeds, these lipid hydroperoxides are converted to volatile compounds associated with undesirable flavors. On the other hand, lipoxygenases may be involved in plant growth and development, senescence, and pest resistance, and, while the genetic removal of soybean seed lipoxygenases might enhance soybean product quality, agronomic quality might be deleteriously affected. Mutant alleles exist for the three soybean seed lipoxygenase isozymes that genetically eliminate each lipoxygenase function. This study compared a set of 10 Lx1Lx1-Lx1Lx1 isolines for agronomic performance, and determined in 'Century' isolines the effect of lipoxygenase removal on pod and stem blight (Phomopsis longicolla Hobbs) fungal infections of seeds. Substituting the null

allele Lx1 for the competent allele Lx1 had no deleterious effects on soybean yield in four environments. Lodging, height, seed weight, and seed oil and protein concentrations were unaffected. Maturity differed significantly, but only by 1 d. In 1988, only Century isolate L2-3, lacking lipoxigenase 2, had a higher level of *P. longicolla* seed infection than Century, and in 1989 only isolate L2L3-2-4, lacking lipoxigenases 2 and 3, had a significantly higher level. Production of soybean genotypes with reduced embryo lipoxigenase levels should not be more severely affected by pod and stem blight disease than genotypes containing all embryo lipoxigenases.

L21 ANSWER 51 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1987:336692 BIOSIS
DOCUMENT NUMBER: PREV198784045635; BA84:45635
TITLE: GRAPEFRUIT SEED OIL EPOXIDATION WITH CUMENE HYDROPEROXIDE KINETIC STUDY.
AUTHOR(S): MARTINEZ DE LA CUESTA P J [Reprint author]; RUS MARTINEZ E; JUSTICIA MEDINA A
CORPORATE SOURCE: DEP QUIMICA TECNICA FAC CIENCIAS, UNIV MALAGA
SOURCE: Grasas y Aceites, (1986) Vol. 37, No. 6, pp. 332-336.
CODEN: GRACAN. ISSN: 0017-3495.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: SPANISH
ENTRY DATE: Entered STN: 8 Aug 1987
Last Updated on STN: 8 Aug 1987

AB The kinetic study of the grapefruit seed oil epoxidation with cumene hydroperoxide, by means of molybdenyl acetylacetonate as catalyst has been carried out. The kinetic equation reproduces the experimental results with an error lower than 10%.

L21 ANSWER 52 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1984:247048 BIOSIS
DOCUMENT NUMBER: PREV198477080032; BA77:80032
TITLE: LIPO PER OXIDATION AND AFLA TOXIN BIOSYNTHESIS BY ASPERGILLUS-PARASITICUS AND ASPERGILLUS-FLAVUS.
AUTHOR(S): FABBRI A A [Reprint author]; FANELLI C; PANFILI G; PASSI S; FASELLA P
CORPORATE SOURCE: DIP BIOL VEGETALE, UNIV ROMA 'LA SAPIENZA' LARGO CRISTINA SVEZIA 24, 00165 ROMA, ITALY
SOURCE: Journal of General Microbiology, (1983) Vol. 129, No. 11, pp. 3447-3452.
CODEN: JGMIAN. ISSN: 0022-1287.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

AB The amount of aflatoxin produced by *A. flavus* and *A. parasiticus* grown on various aged and nonaged seeds, kept at suitable conditions of temperature and moisture, was related to the peroxide numbers of the seed oils. The addition of synthetic hydroperoxides to the cultures increased aflatoxin production.

L21 ANSWER 53 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1983:175743 BIOSIS

DOCUMENT NUMBER: PREV198375025743; BA75:25743
 TITLE: EFFECT OF FRYING OIL ON THE QUALITY OF FRIED CHICKEN MUSCLE.
 AUTHOR(S): POKORNY J [Reprint author]; KOVAROVA H; VOZENILKOVA B; MARCIN A; DAVIDEK J
 CORPORATE SOURCE: DEP FOOD CHEM, PRAGUE INST CHEM TECHNOL, SUCHBATAROVA 5, CS-16628 PRAGUE 6, CZECHOSLOVAKIA
 SOURCE: Nahrung, (1982) Vol. 26, No. 7-8, pp. 681-688.
 CODEN: NAHRAR. ISSN: 0027-769X.
 DOCUMENT TYPE: Article
 FILE SEGMENT: BA
 LANGUAGE: ENGLISH
 AB During deep-fat frying of chicken muscle in sunflower seed oil, the content of thermolabile hydroperoxides reaches a value of .apprx. 5 mmol/kg, while the amount of benzidine-active substances depends on the original amount of hydroperoxides in frying oil. Oxidation products in frying oil deteriorate the quality of odor, of flavor and of the overall sensory value of fried chicken muscle. The flavor quality is mainly affected by increasing intensity of rancid, oily, and fishy off-flavors by interaction of lipid oxidation products with the fried substrate. Breast muscle is more affected by the oxidation products present in frying oil than thigh muscle.

L21 ANSWER 54 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1982:295492 BIOSIS
 DOCUMENT NUMBER: PREV198274067972; BA74:67972
 TITLE: EFFECT OF OXIDATION OF FRYING OIL ON THE SENSORY VALUE OF FRIED FISH FILLET.
 AUTHOR(S): POKORNY J [Reprint author]; KOVAROVA H; MARCIN A; DAVIDEK J
 CORPORATE SOURCE: DEP FOOD CHEM, INST CHEM TECHNOL, SUCHBATAROVA 5, CS-16628 PRAGUE 6, CZECH
 SOURCE: Nahrung, (1982) Vol. 26, No. 2, pp. 121-126.
 CODEN: NAHRAR. ISSN: 0027-769X.
 DOCUMENT TYPE: Article
 FILE SEGMENT: BA
 LANGUAGE: ENGLISH

AB Fresh sunflower seed oil and used oil were compared as media for deep frying of cod fillet. The oxidized oil had more rancid, varnish-like and intensive fried flavors. Hydroperoxides present in used frying oil were decomposed into benzidine-active compounds. The sample fried in used oil had lower overall sensory quality, especially poorer flavor and odor. The flavor profile of the fried product was modified by oxidation products in used oil. The latter profile consisted of significantly more intensive rancid and stale flavors and significant stronger old meat flavor. The production fried in fresh oil had a slightly stronger meat flavor. There was no difference in the intensity of fish flavor.

L21 ANSWER 55 OF 56 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

ACCESSION NUMBER: 1962:89226 BIOSIS
 DOCUMENT NUMBER: PREV19624000013968; BA40:13968
 TITLE: Analyses of lipids and oxidation products by partition chromatography: Hydroxy fatty acids and esters.
 AUTHOR(S): FRANKEL, E. N.; MCCONNELL, D. G.; EVANS, C. D.
 CORPORATE SOURCE: Proctor and Gamble Co., Cincinnati, Ohio

SOURCE: JOUR AMER OIL CHEM SOC, (1962) Vol. 39, No. 6, pp. 297-301.
 DOCUMENT TYPE: Article
 FILE SEGMENT: BA
 LANGUAGE: Unavailable
 ENTRY DATE: Entered STN: May 2007
 Last Updated on STN: May 2007

AB A liquid partition chromatographic procedure was used to separate hydroxy fatty acids, their methyl esters and reduced fatty ester hydroperoxides. Mixtures of methyl stearate, mono- and dihydroxystearate and mixtures of the corresponding free fatty acids were easily separated. Chromatographic determinations for ricinoleate in castor oils compared favorably with the chemical and infrared analyses. The chromatographic procedure was used to separate hydroxy fatty acids in Dimorphotheca and Strophanthus seed oils. The methyl ester of dimorphecolic acid (the principal hydroxy fatty ester of Dimorphotheca oil) behaved like reduced methyl linoleate hydroperoxide and showed a polarity intermediate between methyl 12-hydroxystearate and methyl 9, 10-dihydroxystearate. The 9-hydroxy-12-octadecenoic ester of Strophanthus oil had a larger retention volume than methyl ricinoleate and could be separated from it. The purity of reduced methyl linoleate hydroperoxides and methyl dimorphecolate, (isolated chromatographically) was comparable to that reported in the literature. ABSTRACT AUTHORS: Authors

=> d his

(FILE 'HOME' ENTERED AT 16:05:29 ON 02 NOV 2009)

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

L1 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?
 L2 0 S HYDROXI (3W) HYDROPEROXIDE?
 L3 0 S HYDROXI (5W) HYDROPEROXIDE
 L4 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE
 L5 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009

L6 0 S HYDROXI (5W) PEROXIDE

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009

L7 0 S HYDROXI (W) PEROXIDE
 L8 3 S HYDROPEROSIDE?
 L9 56183 S HYDROPEROXIDE?
 L10 133 S L9 (S) (SUNFLOWER (5W) OIL)
 L11 11 S L10 (L) (OXYGEN OR OZONE)
 L12 97 S L9 (L) OZONIZE?
 L13 13 S L12 (L) SUNFLOWER
 L14 12 S L13 NOT L11

FILE 'STNGUIDE' ENTERED AT 16:28:19 ON 02 NOV 2009

L15 0 S L9 (L) (SEED (W) OIL)
 L16 0 S L9 (L) (PLANT (2W) OIL)
 L17 0 S L9 (L) OIL?
 L18 0 S L10 AND HYDROXI

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:41:05 ON 02 NOV 2009

L19 56 S L9 (L) (SEED (W) OIL)

L20 2 S L19 (L) (OXYGEN OR OZONE)
L21 56 S L19 NOT L13

=> s prepare (L) (fatty (3w) acid (3w) hydroperoxide)
L22 0 PREPARE (L) (FATTY (3W) ACID (3W) HYDROPEROXIDE)

=> s fatty (3w) acid (3w) hydroperoxide
L23 1448 FATTY (3W) ACID (3W) HYDROPEROXIDE

=> s l23 (s) (process or prepare)
L24 30 L23 (S) (PROCESS OR PREPARE)

=> s l14 not l19
L25 12 L14 NOT L19

=> d l25 1-12 ibib abs

L25 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:686196 CAPLUS
DOCUMENT NUMBER: 145:229547
TITLE: Measurement of peroxidic species in ozonized sunflower oil
AUTHOR(S): Tellez, Goitybell Martinez; Lozano, Oscar Ledea; Gomez, Maritza F. Diaz
CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research, Havana, Cuba
SOURCE: Ozone: Science & Engineering (2006), 28(3), 181-185
CODEN: OZSEDS; ISSN: 0191-9512
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Peroxidic species in ozonized sunflower oil using different methods as iodometric and ferrous oxidation in xylenol orange (FOX) were measured. The necessary reaction time from 2 min to ≤36 h using iodometric assay in ozonized sunflower oil was determined. Peroxide values achieved maximum values at 24 h of reaction time. Hydroperoxides content measured by FOX assay and peroxide value determined at 2 min using iodometric assay had a linear relation (r^2 98.18%), while, at 24 h a logarithmic relation (r^2 98.39%) was shown. Values of hydroperoxides were lower than peroxides values at 24 h and represent 23-44% in all samples of ozonized sunflower oil studied.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:520846 CAPLUS
DOCUMENT NUMBER: 145:82192
TITLE: Sunflower oil ozonization. Following the reaction by proton nuclear magnetic resonance
AUTHOR(S): Gomez, Maritza F. Diaz; Sazatornil, Jose A. Gavin
CORPORATE SOURCE: Departamento de Sustancias Ozonizadas, Centro de Investigaciones del Ozono, Centro Nacional de Investigaciones Cientificas, Havana, Cuba
SOURCE: Revista CENIC, Ciencias Quimicas (2005), 36(3), 165-168

CODEN: RCCQER; ISSN: 1015-8553
PUBLISHER: Centro Nacional de Investigaciones Cientificas
DOCUMENT TYPE: Journal
LANGUAGE: Spanish

AB Ozonized sunflower oil has wide biocidal activities (antibacterial, antiviral, antifungal, antiprotozoal) usable in medicinal practice. Proton NMR can be used to follow the ozone reaction with unsatd. fatty acids. The ozonization of sunflower oil was carried out at 0-107.1 mg ozone/g oil and peroxide index and aldehyde contents were determined. The ozonation reaction was run for 3.5 h; the maximum peroxide number reached with 107.1 mg ozone/g oil was 1202 mEq/kg. Oil samples collected during the ozonation were stored at 2-8°C until 1H-NMR anal. The intensities of fatty acid olefinic proton signals (δ = 5.35 ppm) decreased with increasing ozone concns. but did not disappear completely. The Criegee ozonide (δ = 5.15 ppm) levels obtained at 107.1 mg ozone/g were .apprx.7.4-folds higher than at the beginning of reaction. The aldehyde protons had only weak signal (δ = 9.63 and 9.74 ppm) in all spectra. The signals of olefinic protons from hydroperoxides (δ = 5.55 ppm) increased with increasing ozone levels. Signals from other oxygenized groups were also assigned. Thus, the higher applied dose of ozone, the higher yield of oxygenated compds. was obtained.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:207272 CAPLUS
DOCUMENT NUMBER: 145:26861
TITLE: Study of Ozonated Sunflower Oil Using 1H NMR and Microbiological Analysis
AUTHOR(S): Diaz, Maritza; Gavin, Jose; Gomez, Magali; Curtielles, Vicente; Hernandez, Frank
CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research, Havana, Cuba
SOURCE: Ozone: Science & Engineering (2006), 28(1), 59-63
CODEN: OZSEDS; ISSN: 0191-9512
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Prior studies have proven that ozonized vegetable oils present a high germicidal power. Ozonization of sunflower oil at different applied ozone dosages was carried out and peroxide and aldehydes indexes along with antimicrobial activity were determined. The reaction products were identified using 1H NMR. The principal signals intensity values were used for following the reaction course between ozone and sunflower oil. The reaction was following up to peroxide index values of 1202 mmol-equi/Kg. The intensities of olefinic proton signals decreased with the gradual increase in ozone concentration but without disappearing completely. The Criegee ozonides obtained at 107.1 mg/g ozone doses were .apprx.3.9-fold higher than that at beginning of the reaction. The aldehyde protons were observed as a weak intensity signal in all the spectra. The signals belonging to olefinic protons from hydroperoxides appeared weak and increased with the increase in ozone doses. Signals from other oxygenated groups were assigned. The highest action spectrum of antimicrobial activity was obtained with the higher peroxide index. It was concluded that at higher applied ozone

doses, the higher the antimicrobial activity potential of ozonized sunflower oil.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
 REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2005:640083 CAPLUS

DOCUMENT NUMBER: 143:410533

TITLE: Spectroscopic characterization of ozonated sunflower oil

AUTHOR(S): Diaz, Maritza F.; Sazatornil, Jose A. Gavin; Ledea, Oscar; Hernandez, Frank; Alaiz, Manuel; Garces, Rafael
 CORPORATE SOURCE: Department of Ozonized Substances, Ozone Research Center, National Center for Scientific Research, Havana, Cuba

SOURCE: Ozone: Science & Engineering (2005), 27(3), 247-253
 CODEN: OZSEDS; ISSN: 0191-9512

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ozonization reactions are very important in vegetable oil chemical since their ozonization products are involved in antimicrobial effect in therapeutical uses for several microbiol. etiol. diseases. Information on the spectroscopic characterization of the products generated by ozonolysis of sunflower oil is limited. In the present study ozonized sunflower oil with 650 mmol-equiv/kg of peroxide index is chemical characterized. Ozonization of sunflower oil produced ozonides, aldehydes and hydroperoxides which were identified by ¹H, ¹³C and two-dimensional ¹H NMR. The virgin sunflower oil and ozonized sunflower oil show very similar ¹H NMR spectra except for the resonances at $\delta = 9.74$ and $\delta = 9.63$ ppm that correspond to both triplet from aldehydic protons, $\delta = 5.6$ ppm (olefinic signal from hydroperoxides), and $\delta = 5.15$ ppm (multiplet from ozonides methylic protons). Other resonance assignments are based on the connectivities provided by the proton scalar coupling consts. These are the following: $\delta = 3.15$ ppm (doublet from methylenic group in α position respect to olefinic proton), $\delta = 2.45$ ppm (multiplet from methylenic group allylic to ozonides methynic protons) and $\delta = 1.62$ ppm (multiplet methylenic protons in β position respect to ozonides methynic protons). From the ¹³C NMR and ¹H-¹³C two-dimensional spectrum of the ozonized sunflower oil, the presence of ozonides was confirmed by the signals $\delta = 103.43$ and $\delta = 103.49$ ppm, resp. The others new signals found in $\delta = 42.5$ and $\delta = 42.76$ ppm confirm the presence of methylenic carbons from hydroperoxides and ozonides. These results indicate that NMR Spectroscopy can provide valuable information about the amount of reaction compds. of ozonized vegetable oil. From the chemical structural elucidation of ozonated sunflower oils, relevant biochem. and chemical information can be achieved.

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2003:865991 CAPLUS
 DOCUMENT NUMBER: 140:130053
 TITLE: Ozonation of sunflower oil: Spectroscopic monitoring of the degree of unsaturation
 AUTHOR(S): Soriano, Nestor U., Jr.; Migo, Veronica P.; Matsumura, Masatoshi
 CORPORATE SOURCE: Institute of Applied Biochemistry, University of Tsukuba, Ibaraki, 305-8572, Japan
 SOURCE: Journal of the American Oil Chemists' Society (2003), 80(10), 997-1001
 CODEN: JAOCA7; ISSN: 0003-021X
 PUBLISHER: AOCS Press
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Consumption of ozone by unsatd. FA moieties of sunflower oil (SFO) was monitored by 1H NMR and FTIR spectroscopy. Degradation of linoleate was found to be 1.5 and 1.8 times higher than oleate when SFO was ozonized in the absence and presence of water, resp. Products of ozonation in both cases include aldehydes and ozonides with 1,2,4-trioxolane ring. Hydroxyl-containing compds., which could be carboxylic acids and/or hydroperoxides, were also detected in samples ozonized in the presence of water. The extent of ozonation had very little effect on the aldehyde/ozonide ratio obtained from NMR spectra, especially in the ozonation of neat SFO. The aldehyde/ozonide ratios obtained regardless of the extent of ozonation were 10.5:89.5 and 46.6:53.4 for SFO ozonized in the absence and presence of water, resp.
 OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2003:818513 CAPLUS
 DOCUMENT NUMBER: 139:312467
 TITLE: Method for obtaining ozonized oils and vegetable fats and use of said products for pharmaceutical and cosmetic purposes
 INVENTOR(S): Moleiro Mirabal, Jesus; Menendez Cepero, Silvia Amparo; Ledea Lozano, Oscar Ernesto; Diaz Gomez, Maritza Felisa; Diaz Rubi, Wilfredo Felix; Fernandez Garcia, Lidia Asela; Lezcano Lastre, Irene de las Mercedes
 PATENT ASSIGNEE(S): Centro Nacional de Investigaciones Cientificas (CNIC), Cuba
 SOURCE: PCT Int. Appl., 34 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Spanish
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| WO 2003085072 | A1 | 20031016 | WO 2003-CU3 | 20030402 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, | | | | |

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003218602 A1 20031020 AU 2003-218602 20030402
EP 1497401 A1 20050119 EP 2003-711810 20030402

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

BR 2003009246 A 20050209 BR 2003-9246 20030402
MX 2004009712 A 20050714 MX 2004-9712 20041005
ZA 2004008856 A 20051013 ZA 2004-8856 20041102
US 20060074129 A1 20060406 US 2005-511025 20050428

PRIORITY APPLN. INFO.: CU 2002-71 A 20020408
WO 2003-CU3 W 20030402

AB The oils are produced by ozonization of vegetable oils and fats in a bubble reactor using ozone, O₃, or their mixts. in liquid phase at 30-50° to form the corresponding α -hydroxy-hydroperoxides. The vegetable oils include sunflower, cacao, olive, soybean, jojoba, coconut palm, canola, corn, sesame, thistle, linseed, castor, rice, sugarcane, pumpkin, peanut, and almond oils. The produces are suitable for use in chemical, pharmaceutical, and cosmetics industry, and possess bactericidal, virucidal, parasiticidal and fungicidal activity and do not show toxicol. or adverse reactions. The ozonized oils can be used in treatment of diseases, in skin revitalizing cosmetics formulations.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:348032 CAPLUS

DOCUMENT NUMBER: 135:111587

TITLE: Volatile components of ozonized sunflower oil "OLEOZON"

AUTHOR(S): Ledea, Oscar; Correa, Teresa; Escobar, Mayhery; Rosado, Aristides; Molerio, Jesus; Hernandez, Carlos; Jardines, Daniel

CORPORATE SOURCE: Ozone Research Center, National Center for Scientific Research, Havana City, Cuba

SOURCE: Ozone: Science & Engineering (2001), 23(2), 121-126
CODEN: OZSEDS; ISSN: 0191-9512

PUBLISHER: Lewis Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB During the ozonization of the triglycerides and unsatd. fatty acids from sunflower oil, aldehydes and carboxylic acids with 3, 6 and 9 C atoms are obtained, together with hydroperoxides, ozonides and other peroxide species. Some of them present relatively low b.p.s., constituting the volatile fraction of OLEOZON. The volatile fraction was characterized by gas chromatog.-mass spectrometry (GC/MS) and GC combined with 3 different extraction techniques: gaseous purge with cold trap collection, gaseous purge

with Tenax adsorption followed by a solvent elution and liquid-liquid extraction

The volatile fraction of OLEOZON is composed by saturated and unsatd. aldehydes and carboxylic acids. Hexanal, nonanal, 3-nonenal and malonaldehyde were the main components of the volatile fraction.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 8 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 2006:522155 BIOSIS
DOCUMENT NUMBER: PREV200600532108
TITLE: Measurement of peroxidic species in ozonized sunflower oil.
AUTHOR(S): Tellez, Goitybell Martinez; Lozano, Oscar Ledea; Diaz Gomez, Maritza F. [Reprint Author]
CORPORATE SOURCE: Natl Ctr Sci Res, Ozone Res Ctr, Dept Ozonized Subst, POB 6412, Havana, Cuba
maritza.diaz@cnic.edu.cu
SOURCE: Ozone Science & Engineering, (JUN 2006) Vol. 28, No. 3, pp. 181-185.
CODEN: OZSEDS. ISSN: 0191-9512.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Oct 2006
Last Updated on STN: 12 Oct 2006

AB Peroxidic species in ozonized sunflower oil using different methods as iodometric and ferrous oxidation in xlylenol orange (FOX) were measured. The necessary reaction time from two minutes up to 36 hours using iodometric assay in ozonized sunflower oil was determined. Peroxide values achieved maximum values at 24 hours of reaction time. Hydroperoxides content measured by FOX assay and peroxide value determined at two minutes using iodometric assay had a linear relationship ($r(2) = 98.18\%$), while, at 24 hours a logarithmic relationship ($r(2) = 98.39\%$) was shown. Values of hydroperoxides were lower than peroxides values at 24 hours and represent between 23 and 44% in all samples of ozonized sunflower oil studied.

L25 ANSWER 9 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 2006:368724 BIOSIS
DOCUMENT NUMBER: PREV200600373535
TITLE: Study of ozonated sunflower oil H-1 NMR and microbiological analysis.
AUTHOR(S): Diaz, Maritza F. [Reprint Author]; Gavin, Jose A.; Gomez, Magali; Curtielles, Vicente; Hernandez, Frank
CORPORATE SOURCE: Natl Ctr Sci Res, Ozone Res Ctr, Dept Ozonized Substances, POB 6990, Havana 6880, Cuba
maritza.diaz@cnic.edu.cu
SOURCE: Ozone Science & Engineering, (FEB 2006) Vol. 28, No. 1, pp. 59-63.
CODEN: OZSEDS. ISSN: 0191-9512.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 26 Jul 2006
Last Updated on STN: 26 Jul 2006

AB Prior studies have proven that ozonated vegetable oils present a high germicidal power. Ozonation of sunflower oil at different

applied ozone dosage was carried out and peroxide and aldehydes indices along with antimicrobial activity were determined. The reaction products were identified using Proton Nuclear Magnetic Resonance Spectroscopy (H-1 NMR). The principal signals intensity values were used for following the reaction course between ozone and sunflower oil. The reaction was following up to peroxide index values of 1202 mmol-equi/kg. The intensities of olefinic proton signals decreased with the gradual increase in ozone concentration but without disappearing completely. The Criegee ozonides obtained at 107.1 mg/g of ozone doses were approximately 3.9-fold higher than that at beginning of the reaction. The aldehyde protons were observed as a weak intensity signal in all the spectra. The signals belonging to olefinic protons from hydroperoxides appeared weak and increased with the increase in ozone doses. Signals from other oxygenated groups were assigned. The highest action spectrum of antimicrobial activity was obtained with the higher peroxide index. It was concluded that at higher applied ozone doses, the higher the antimicrobial activity potential of ozonized sunflower oil.

L25 ANSWER 10 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2005:341548 BIOSIS
 DOCUMENT NUMBER: PREV200510128558
 TITLE: Spectroscopic characterization of ozonated sunflower oil.
 AUTHOR(S): Diaz, Maritza F. [Reprint Author]; Sazatornil, Jose A. Gavin; Ledea, Oscar; Hernandez, Frank; Alaiz, Manuel; Garces, Rafael
 CORPORATE SOURCE: Avenida 230 and 15, Siboney CP 6412, Playa Ciudad Havana, Cuba
 SOURCE: ozono@infomed.sld.cu
 Ozone Science & Engineering, (JUN 2005) Vol. 27, No. 3, pp. 247-253.
 CODEN: OZSEDS. ISSN: 0191-9512.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 31 Aug 2005
 Last Updated on STN: 31 Aug 2005
 AB Ozonation reactions are very important in vegetable oil chemistry since their ozonation products are involved in antimicrobial effect in therapeutical uses for several microbiological etiology diseases. Information on the spectroscopic characterization of the products generated by ozonolysis of sunflower oil is limited. In the present study ozonized sunflower oil with 650 mmol-equiv/kg of peroxide index is chemically characterized. Ozonation of sunflower oil produced ozonides, aldehydes and hydroperoxides which were identified by H-1, C-13 and two-dimensional H-1 Nuclear Magnetic Resonance (NMR). The virgin sunflower oil and ozonized sunflower oil show very similar 1H NMR spectra except for the resonances at $\delta = 9.74$ and $\delta = 9.63$ ppm that correspond to both triplet from aldehydic protons, $\delta = 5.6$ ppm (olefinic signal from hydroperoxides), and $\delta = 5.15$ ppm (multiplet from ozonides methylic protons). Other resonance assignments are based on the connectivities provided by the proton scalar coupling constants. These are the following: $\delta = 3.15$ ppm (doublet from methylenic group in a position respect to olefinic proton), $\delta = 2.45$ ppm (multiplet from methylenic group allylic to ozonides methynic protons) and $\delta = 1.62$ ppm (multiplet methylenic protons in beta

position respect to ozonides methynic protons). From the C-13 NMR and H-1-C-13 two-dimensional spectrum of the ozonized sunflower oil, the presence of ozonides was confirmed by the signals $\delta = 103.43$ and $\delta = 103.49$ ppm, respectively. The others new signals found in $\delta = 42.5$ and $\delta = 42.76$ ppm confirm the presence of methylenic carbons front hydroperoxides and ozonides. These results indicate that NMR Spectroscopy can provide valuable information about the amount of reaction compounds of ozonized vegetable oil. From the chemical structural elucidation of ozonated sunflower oily, relevant biochemical and chemical information can be achieved.

- L25 ANSWER 11 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2003:558481 BIOSIS
 DOCUMENT NUMBER: PREV200300561555
 TITLE: Ozonation of sunflower oil: Spectroscopic monitoring of the degree of unsaturation.
 AUTHOR(S): Soriano, Nestor U. Jr.; Migo, Veronica P.; Matsumura, Masatoshi [Reprint Author]
 CORPORATE SOURCE: Institute of Applied Biochemistry, University of Tsukuba, Tennodai 1-1-1, Tsukuba, Ibaraki, 305-0006, Japan
 aquacel@sakura.cc.tsukuba.ac.jp
 SOURCE: Journal of the American Oil Chemists' Society, (October 2003) Vol. 80, No. 10, pp. 997-1001. print.
 CODEN: JAOCA7. ISSN: 0003-021X.
 DOCUMENT TYPE: Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 26 Nov 2003
 Last Updated on STN: 26 Nov 2003
- AB Consumption of ozone by unsaturated FA moieties of sunflower oil (SFO) was monitored by ¹H NMR and FTIR spectroscopy. Degradation of linoleate was found to be 1.5 and 1.8 times higher than oleate when SFO was ozonized in the absence and presence of water, respectively. Products of ozonation in both cases include aldehydes and ozonides with 1,2,4-trioxolane ring. Hydroxyl-containing compounds, which could be carboxylic acids and/or hydroperoxides, were also detected in samples ozonized in the presence of water. The extent of ozonation had very little effect on the aldehyde/ozonide ratio obtained from NMR spectra, especially in the ozonation of neat SFO. The aldehyde/ozonide ratios obtained regardless of the extent of ozonation were 10.5:89.5 and 46.6:53.4 for SFO ozonized in the absence and presence of water, respectively.
- L25 ANSWER 12 OF 12 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
 ACCESSION NUMBER: 2001:286179 BIOSIS
 DOCUMENT NUMBER: PREV200100286179
 TITLE: Volatile components of ozonized sunflower oil "OLEOZON(R)".
 AUTHOR(S): Ledea, Oscar [Reprint author]; Correa, Teresa; Escobar, Mayhery [Reprint author]; Rosado, Aristides; Molerio, Jesus [Reprint author]; Hernandez, Carlos [Reprint author]; Jardines, Daniel [Reprint author]
 CORPORATE SOURCE: Ozone Research Center, National Center for Scientific Research, Ave. 230 y 15, Playa, Havana City, Cuba
 ozono@infomed.sld.cu
 SOURCE: Ozone Science and Engineering, (April, 2001) Vol. 23, No.

2, pp. 121-126. print.
CODEN: OZSEDS. ISSN: 0191-9512.

DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 13 Jun 2001
Last Updated on STN: 19 Feb 2002

AB During the ozonation of the triglycerides and unsaturated fatty acids from sunflower oil, aldehydes and carboxylic acids with three, six and nine carbon atoms are obtained, together with hydroperoxides, ozonides and other peroxide species. Some of them present relatively low boiling points, constituting the volatile fraction of ozonized sunflower oil (OLEOZON(R)). In the present work, the volatile fraction was characterized by Gas Chromatography - Mass Spectrometry (GC/MS) and Gas Chromatography (GC) combined with three different extraction techniques: gaseous purge with cold trap collection, gaseous purge with Tenax adsorption followed by a solvent elution and liquid-liquid extraction. The volatile fraction of OLEOZON(R) is composed by saturated and unsaturated aldehydes and carboxylic acids. Hexanal, nonanal, 3-nonenaldehyde and malonaldehyde were the main components of the volatile fraction.

=> d his

(FILE 'HOME' ENTERED AT 16:05:29 ON 02 NOV 2009)

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:06:19 ON 02 NOV 2009

L1 0 S ALPHA (2W) HYDROXI (2W) HYDROPEROXIDE?
L2 0 S HYDROXI (3W) HYDROPEROXIDE?
L3 0 S HYDROXI (5W) HYDROPEROXIDE
L4 8 S (SUNFLOWER (W) OIL) (L) (OZONE) (L) HYDROPEROXIDE
L5 2 S (SEED (W) OIL) (L) (OXYGEN OR OZONE) (L) HYDROPEROXIDE

FILE 'STNGUIDE' ENTERED AT 16:13:23 ON 02 NOV 2009

L6 0 S HYDROXI (5W) PEROXIDE

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:14:22 ON 02 NOV 2009

L7 0 S HYDROXI (W) PEROXIDE
L8 3 S HYDROPEROSIDE?
L9 56183 S HYDROPEROXIDE?
L10 133 S L9 (S) (SUNFLOWER (5W) OIL)
L11 11 S L10 (L) (OXYGEN OR OZONE)
L12 97 S L9 (L) OZONIZE?
L13 13 S L12 (L) SUNFLOWER
L14 12 S L13 NOT L11

FILE 'STNGUIDE' ENTERED AT 16:28:19 ON 02 NOV 2009

L15 0 S L9 (L) (SEED (W) OIL)
L16 0 S L9 (L) (PLANT (2W) OIL)
L17 0 S L9 (L) OIL?
L18 0 S L10 AND HYDROXI

FILE 'CAPLUS, AGRICOLA, BIOSIS' ENTERED AT 16:41:05 ON 02 NOV 2009

L19 56 S L9 (L) (SEED (W) OIL)
L20 2 S L19 (L) (OXYGEN OR OZONE)
L21 56 S L19 NOT L13
L22 0 S PREPARE (L) (FATTY (3W) ACID (3W) HYDROPEROXIDE)

Serial No.: 10/511025_D

L23 1448 S FATTY (3W) ACID (3W) HYDROPEROXIDE
L24 30 S L23 (S) (PROCESS OR PREPARE)
L25 12 S L14 NOT L19

=> log off

ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF

LOGOFF? (Y)/N/HOLD:y

STN INTERNATIONAL LOGOFF AT 17:01:35 ON 02 NOV 2009